HCD-SB100/SB200

SERVICE MANUAL

Ver. 1.8 2006.02

US Model
Canadian Model
HCD-SB100
AEP Model
UK Model
E Model
Australian Model
HCD-SB100/SB200

Photo: HCD-SB100

- HCD-SB100/SB200 are the amplifier, DVD/CD and tuner section in DAV-SB100/SB200.

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- Abbreviation
  AUS : Australian model
  CND : Canadian model
  EA : Saudi Arabia model
  EE : East European model
  RU : Russian model
  SP : Singapore model

SPECIFICATIONS

(SB100: US, CND models)

[General]	Power supply	120V AC, 60Hz
	Power consumption	70W, No more than 1 W (120V AC) (at the power saving mode)
	Mass	4.7 kg
	External dimensions (W×H×D)	430 x 70 x 383.5 mm
	Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal
	Operating humidity	5% to 85%
[CD/DVD]	Laser	Semiconductor laser, wavelength 650 nm for VCD and DVD, wavelength 780 nm for CD
	Emission duration	Continuous
	Signal system	NTSC 525/60
	Frequency response (audio)	2 Hz ~ 20 kHz (±1.0 dB)
	Signal-to-noise ratio (audio)	More than 75 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)
	Dynamic range (audio)	More than 70 dB
	Harmonic distortion (audio)	0.5 % (1 kHz, at 12W position) (20 kHz LPF/A-Filter)
[Video]	Inputs	VIDEO (AUDIO IN): Sensitivity: 800 m V Impedance: 50 kilohms
	Video output	1.0 V (p-p), 75 Ω, negative sync., RCA jack
	S VIDEO OUT	(Y) 1.0 V (p-p), 75 ohms, negative sync, Mini DIN 4-pin x 1 (C) 0.286 V (p-p) 75 ohms
	COMPONENT VIDEO OUT	(Y) 1.0 V (p-p), 75 ohms, negative sync, RCA jack x 1 (P_B/C_B)/(P_R/C_R) 0.7 V (p-p), 75 ohms, RCA jack x 2
[Tuner] [FM]	Tuning Range	87.5 - 108 MHz
	Intermediate Frequency	10.7 MHz
	Signal-to Noise Ratio	60 dB (Mono)
[Tuner] [AM (MW)]	Tuning Range	522 - 1,611 kHz
	Intermediate Frequency	450 kHz
[Amplifier]	Stereo mode	50W + 50W (8 Ω at 1 kHz, THD 10 %)
	Surround mode (* Depending on the sound mode settings and the source, there may be no sound output.)	Front: 50W + 50W Centre*: 50W Surround*: 50W + 50W (8Ω at 1 kHz, THD 10 %) Subwoofer*: 80W (4Ω at 50 Hz, THD 10 %)
	Outputs	PHONES: (32 Ω, 25mW)

– Continued on next page –

DVD RECEIVER

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Sony Corporation
Home Audio Division
Published by Sony Techno Create Corporation

SONY

HCD-SB100/SB200

Ver. 1.1

(SB100: AEP, UK, RU, EE models)

[General]	Power supply	220-240V AC, 50/60Hz
	Power consumption	70W, No more than 1 W (220-240V AC) (at the power saving mode)
	Mass	4.7 kg
	External dimensions (W x H x D)	430 x 70 x 383.5 mm
	Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal
	Operating humidity	5% to 85%
[CD/DVD]	Laser	Semiconductor laser, wavelength 650 nm for VCD and DVD, wavelength 780 nm for CD
	Emission duration	Continuous
	Signal system	PAL 625/50, NTSC 525/60
	Frequency response (audio)	2 Hz ~ 20 kHz (±1.0 dB)
	Signal-to-noise ratio (audio)	More than 75 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)
	Dynamic range (audio)	More than 70 dB
	Harmonic distortion (audio)	0.5 % (1 kHz, at 12W position) (20 kHz LPF/A-Filter)
[Video]	Inputs	VIDEO (AUDIO IN): Sensitivity: 800 m V Impedance: 50 kilohms SCART (AUDIO IN): Sensitivity: 800 m V Impedance: 50 kilohms
	Video output	1.0 V (p-p), 75 Ω, negative sync., RCA jack EURO AV (TO TV)
[Tuner] [FM]	Tuning Range	87.5 - 108 MHz
	Intermediate Frequency	10.7 MHz
	Signal-to Noise Ratio	60 dB (Mono)
[Tuner] [AM (MW)]	Tuning Range	522 - 1,611 kHz
	Intermediate Frequency	450 kHz
[Amplifier]	Stereo mode	50W + 50W (8 Ω at 1 kHz, THD 10 %)
	Surround mode **(* Depending on the sound mode settings and the source, there may be no sound output.)**	Front: 50W + 50W Centre*: 50W Surround*: 50W + 50W (8Ω at 1 kHz, THD 10 %) Subwoofer*: 80W (4Ω at 50 Hz, THD 10 %)
	Outputs	PHONES: (32 Ω, 25mW)

(SB100: EA, SP, AUS models)

[General]	Power supply	220-240V AC, 50/60Hz
	Power consumption	70W, No more than 1 W (220-240V AC) (at the power saving mode)
	Mass	4.7 kg
	External dimensions (W x H x D)	430 x 70 x 383.5 mm
	Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal
	Operating humidity	5% to 85%
[CD/DVD]	Laser	Semiconductor laser, wavelength 650 nm for VCD and DVD, wavelength 780 nm for CD
	Emission duration	Continuous
	Signal system	PAL 625/50, NTSC 525/60
	Frequency response (audio)	2 Hz ~ 20 kHz (±1.0 dB)
	Signal-to-noise ratio (audio)	More than 75 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)
	Dynamic range (audio)	More than 70 dB
	Harmonic distortion (audio)	0.5 % (1 kHz, at 12W position) (20 kHz LPF/A-Filter)
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	Video output	1.0 V (p-p), 75 Ω, negative sync., RCA jack
	S VIDEO OUT	(Y) 1.0 V (p-p), 75 ohms, negative sync, Mini DIN 4-pin x 1 (C) 0.286 V (p-p) 75 ohms
	COMPONENT VIDEO OUT	(Y) 1.0 V (p-p), 75 ohms, negative sync, RCA jack x 1 (PB/CB)/(PR/CR) 0.7 V (p-p), 75 ohms, RCA jack x 2
[Tuner] [FM]	Tuning Range	87.5 - 108 MHz
	Intermediate Frequency	10.7 MHz
	Signal-to Noise Ratio	60 dB (Mono)
	Frequency Response (AUS)	150 - 10,000 Hz
[Tuner] [AM (MW)]	Tuning Range	522 - 1,611 kHz
	Intermediate Frequency	450 kHz
[Amplifier]	Stereo mode	50W + 50W (8 Ω at 1 kHz, THD 10 %)
	Surround mode **(* Depending on the sound mode settings and the source, there may be no sound output.)**	Front: 50W + 50W (THD 10 %) Centre*: 50W Surround*: 50W + 50W (8Ω at 1 kHz, THD 10 %) Subwoofer*: 80W (4Ω at 50 Hz, THD 10 %)
	Output	PHONES: (32 Ω, 25mW)

(SB200: AEP, UK, RU, EE models)

[General]	Power supply	220-240V AC, 50/60Hz
	Power consumption	100W, No more than 1 W (220-240V AC) (at the power saving mode)
	Mass	4.9 kg
	External dimensions (W x H x D)	430 x 70 x 370 mm
	Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal
	Operating humidity	5% to 85%
[CD/DVD]	Laser	Semiconductor laser, wavelength 650 nm for VCD and DVD, wavelength 780 nm for CD
	Emission duration	Continuous
	Signal system	PAL, NTSC
	Frequency response (audio)	2 Hz ~ 20 kHz (±1.0 dB)
	Signal-to-noise ratio (audio)	More than 75 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)
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	Signal-to Noise Ratio	60 dB (Mono)
[Tuner] [AM (MW)]	Tuning Range	522 - 1,611 kHz
	Intermediate Frequency	450 kHz
[Amplifier]	Stereo mode	80W + 80W (6 Ω at 1 kHz, THD 10 %)
	Surround mode **(* Depending on the sound mode settings and the source, there may be no sound output.)**	Front: 80W + 80W Centre*: 80W Surround*: 80W + 80W (6Ω at 1 kHz, THD 10 %) Subwoofer*: 150W (3Ω at 50 Hz, THD 10 %)
	Outputs	PHONES: (32 Ω, 25mW)

(SB200: SP, AUS models)

[General]	Power supply	220-240V AC, 50/60Hz
	Power consumption	100W, No more than 1 W (220-240V AC) (at the power saving mode)
	Mass	4.9 kg
	External dimensions (W x H x D)	430 x 70 x 370 mm
	Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal
	Operating humidity	5% to 85%
[CD/DVD]	Laser	Semiconductor laser, wavelength 650 nm for VCD and DVD, wavelength 780 nm for CD
	Emission duration	Continuous
	Signal system	PAL, NTSC
	Frequency response (audio)	2 Hz ~ 20 kHz (±1.0 dB)
	Signal-to-noise ratio (audio)	More than 75 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)
	Dynamic range (audio)	More than 70 dB
	Harmonic distortion (audio)	0.5 % (1 kHz, at 12W position) (20 kHz LPF/A-Filter)
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	S VIDEO OUT	(Y) 1.0 V (p-p), 75 ohms, negative sync, Mini DIN 4-pin x 1 (C) 0.286 V (p-p) 75 ohms
	COMPONENT VIDEO OUT	(Y) 1.0 V (p-p), 75 ohms, negative sync, RCA jack x 1 (PB/CB)/(PR/CR) 0.7 V (p-p), 75 ohms, RCA jack x 2
[Tuner] [FM]	Tuning Range	87.5 - 108 MHz
	Intermediate Frequency	10.7 MHz
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	Outputs	PHONES: (32 Ω, 25mW)

Designs and specifications are subject to change without notice.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

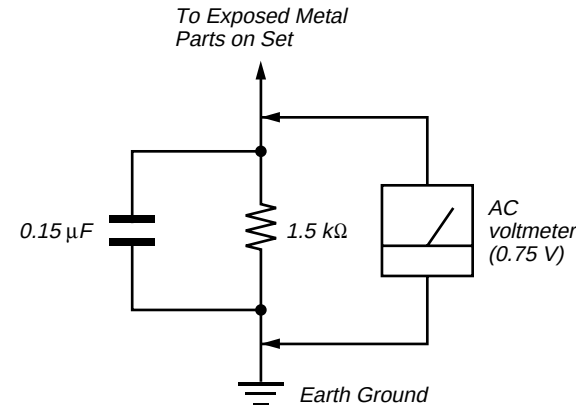

Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COM- POSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

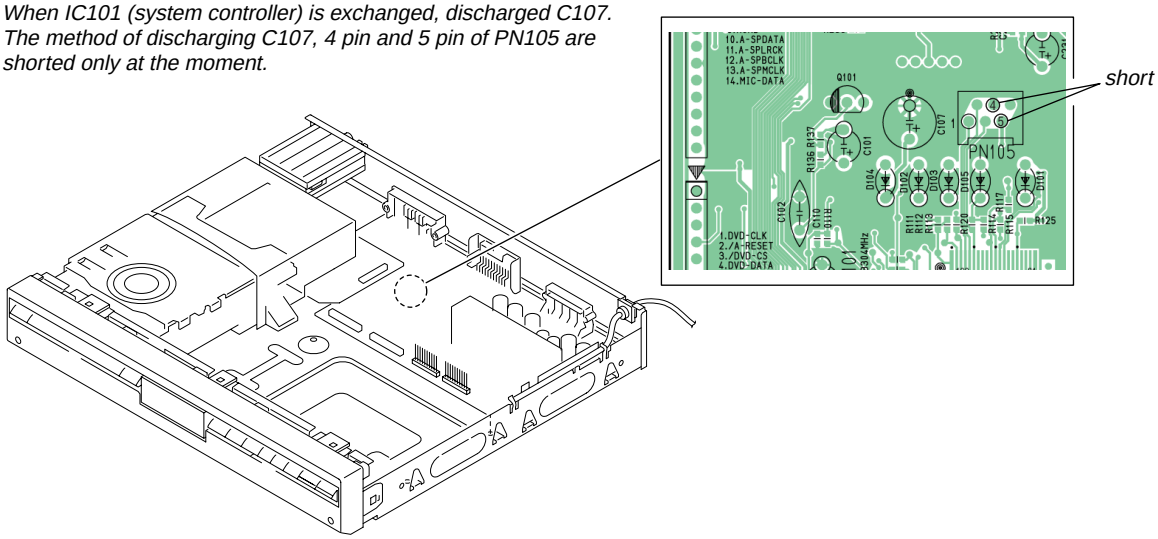
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the “S curve check” in “CD section adjustment” and check that the S curve waveform is output several times.

Attention when IC101 (system controller) exchanged.

When IC101 (system controller) is exchanged, discharged C107. The method of discharging C107, 4 pin and 5 pin of PN105 are shorted only at the moment.



SECTION 2
GENERAL

This section is extracted from instruction manual.

- Abbreviation
  AUS : Australian model
  CND : Canadian model
  EA : Saudi Arabia model
  EE : East European model
  RU : Russian model
  SP : Singapore model

Front Panel Controls

I / ⏻ (POWER) indicator
Switches the DVD Receiver ON and OFF.

STANDBY indicator
Lights red when the receiver is in Standby mode (off).

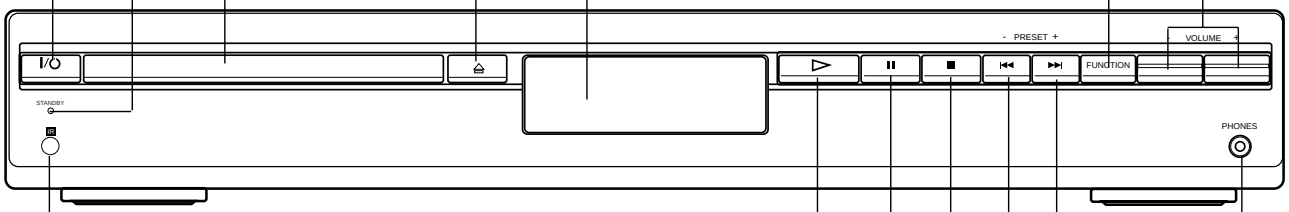
Disc Tray
Insert a disc here.

OPEN/CLOSE (⏏)
Opens or closes the disc tray.

Display window

VOLUME Control
Press “+” to increase volume or press “-” to decrease the volume.

FUNCTION
To select the Receiver’s source. (FM, AM, VIDEO, TV or CD/DVD)



PLAY (▷)
To play back a disc.

PAUSE (II)
Pause playback of a disc temporarily.

STOP (■)
Stops playback of a disc.

Reverse SKIP (I◀◀)
DVD: Go to beginning of current chapter/track or to previous chapter/track.
RADIO: To select preset station you want.

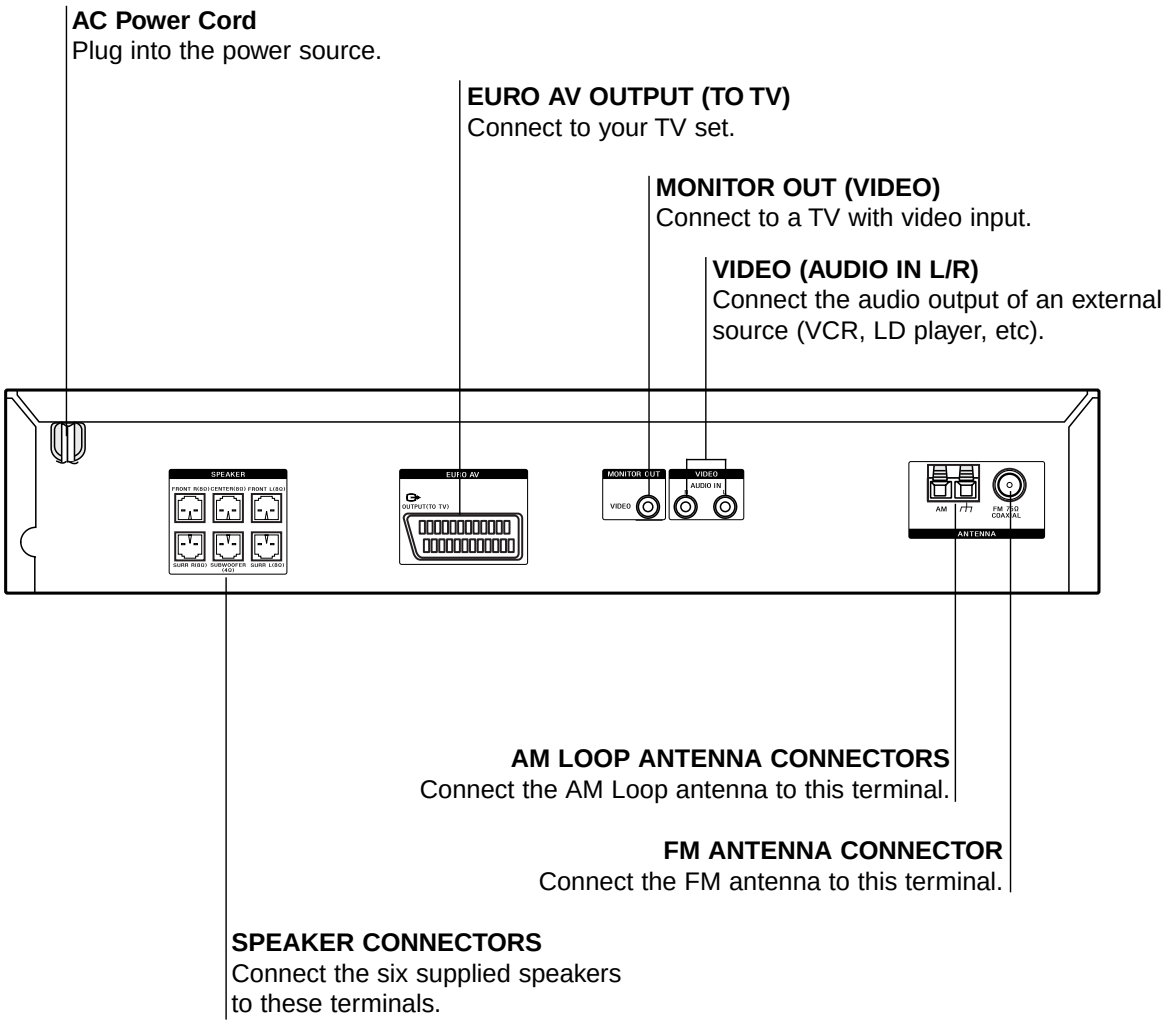
Forward SKIP (▶▶I)
DVD: Go to NEXT chapter/track.
RADIO: To select preset station you want.

PHONES
To connect headphones.

Remote Sensor
Point the DVD receiver remote control here.

(SB100: AEP, UK, RU, EE models)

Rear Panel Connections



⚠

Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

(SB100: US, CND, EA, SP, AUS models)

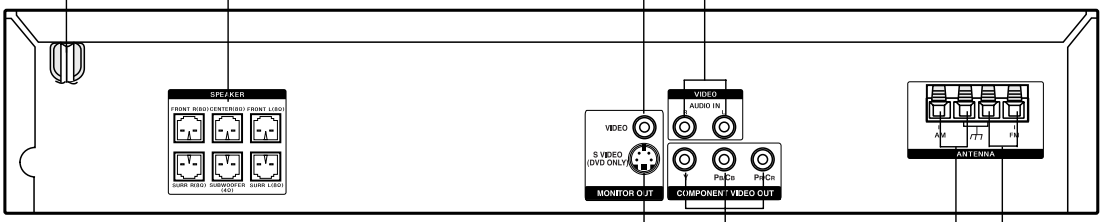
Rear Panel Connections

AC Power Cord
Plug into the power source.

SPEAKER CONNECTORS
Connect the six supplied speakers to these terminals.

MONITOR OUT (VIDEO)
Connect to a TV with video input.

VIDEO (AUDIO IN L/R)
Connect the audio output of an external source (VCR, LD player, etc).



MONITOR S VIDEO OUT (DVD Only)
Connect to a S Video Input on TV.
FOR DVD VIEWING ONLY.

COMPONENT VIDEO OUT (Y P_B/C_B P_R/C_R)
Connect to a TV with Y P_B/C_B P_R/C_R inputs.
FOR DVD VIEWING ONLY.

AM LOOP ANTENNA CONNECTORS
Connect the AM Loop antenna to this terminal.

FM ANTENNA CONNECTORS
Connect the FM antenna to this terminal.

⚠

Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

(SB200: AEP, UK, RU, EE models)

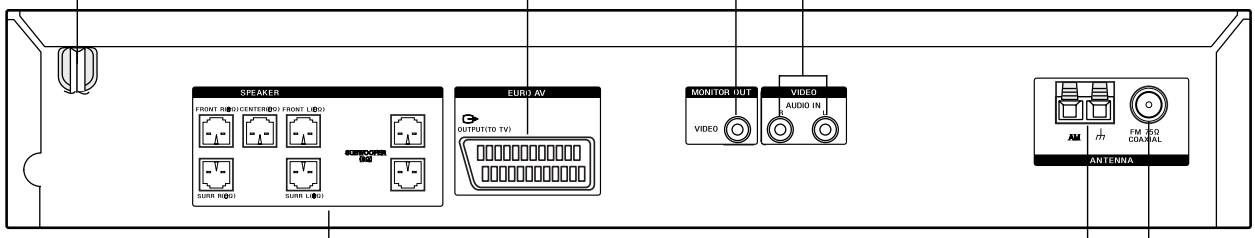
Rear Panel Connections

AC Power Cord
Plug into the power source.

EURO AV OUTPUT (TO TV)
Connect to your TV set.

MONITOR OUT (VIDEO)
Connect to a TV with video input.

VIDEO (AUDIO IN R/L)
Connect the audio output of an external source (VCR, LD player, etc).



AM LOOP ANTENNA CONNECTORS
Connect the AM Loop antenna to this terminal.

FM ANTENNA CONNECTOR
Connect the FM antenna to this terminal.

SPEAKER CONNECTORS
Connect the six supplied speakers to these terminals.

⚠

Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

(SB200: SP, AUS models)

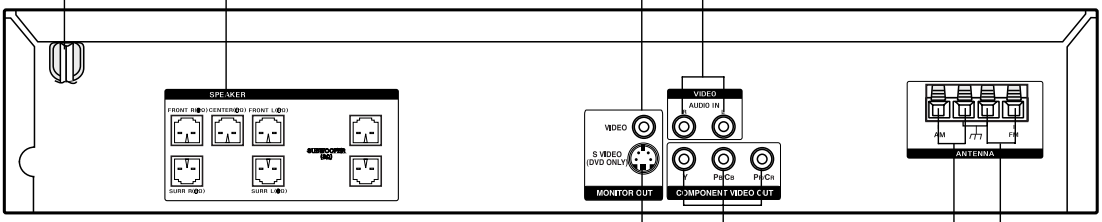
Rear Panel Connections

AC Power Cord
Plug into the power source.

SPEAKER CONNECTORS
Connect the six supplied speakers to these terminals.

MONITOR OUT (VIDEO)
Connect to a TV with video input.

VIDEO (AUDIO IN L/R)
Connect the audio output of an external source (VCR, LD player, etc).



MONITOR S VIDEO OUT (DVD ONLY)
Connect to a S Video Input on TV.
FOR DVD VIEWING ONLY.

COMPONENT VIDEO OUT (Y P_B/C_B P_R/C_R)
Connect to a TV with Y P_B/C_B P_R/C_R inputs.
FOR DVD VIEWING ONLY.

AM LOOP ANTENNA CONNECTORS
Connect the AM Loop antenna to this terminal.

FM ANTENNA CONNECTORS
Connect the FM antenna to this terminal.

⚠

Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

Remote Control

SLEEP
To place the unit in the Sleep mode.

TUNER/BAND
Selects the DVD Receiver's tuner as the listening choice. (FM and AM bands)

MUTING
Momentarily silence the speaker of the DVD Receiver.

TUNER MENU
Memorize a radio station frequency into the tuner.
Press to clear preset stations from the tuner memory.

PROGRAM
Enters to the programme edit mode or exits from that.

REPEAT
Repeat chapter, track, title, all.

FM MODE
To change between MONO and STEREO modes.

TV
To control TVs with the Remote.

AUDIO
Selects an audio language (DVD) or an audio channel (CD).

ANGLE
Selects a DVD camera angle if available.

SUBTITLE
Selects a subtitle language.

PREV/PRESET-
Go to beginning of current chapter or track or go to previous chapter or track.
Select programme of Tuner.

NEXT/PRESET+
Go to next chapter or track.
Select programme of Tuner.

DVD TOP MENU
Displays the disc's Title menu, if available.

←/→/↑/↓ (left/right/up/down)
Selects an option in the menu.

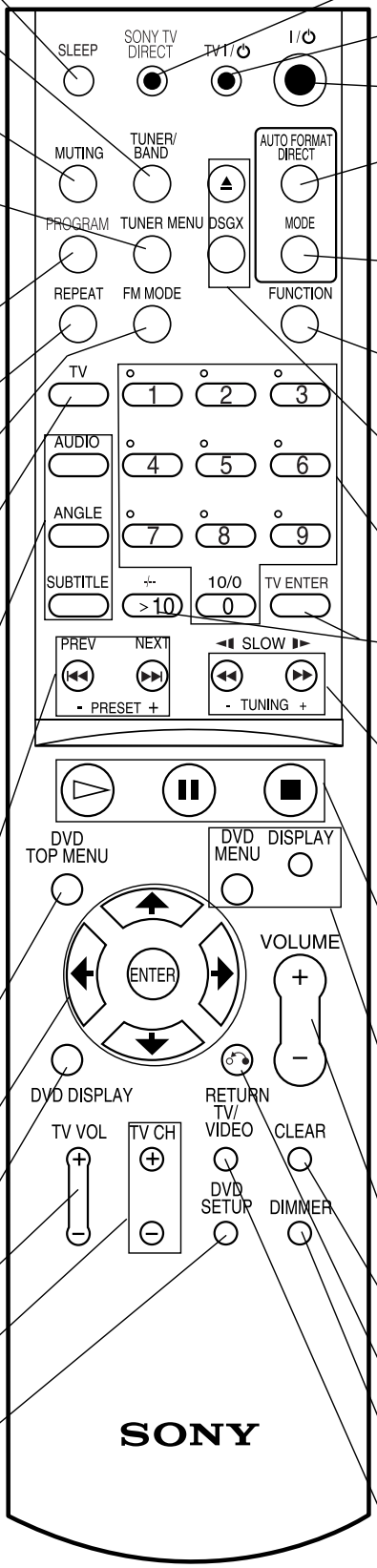
ENTER
Acknowledges menu selection.

DVD DISPLAY
Accesses On-Screen display.

TV VOL +/–
Adjusts TV's volume.

TV CH +/–
Selects TV's channel.

DVD SETUP
Accesses or removes DVD setup menu.



SONY TV DIRECT
Select the output source to DVD directly.

TV I / ⏻
Switches TV ON and OFF.

I / ⏻
Switches DVD Receiver ON and OFF.

AUTO FORMAT DIRECT
Selects sound mode between A.F.D. AUTO, PRO LOGIC, PLII MOVIE and PLII MUSIC.

MODE
Selects sound mode between FLAT, ROCK, POP, JAZZ, CLASSIC and NEWS.

FUNCTION
To select the Receiver's source. (FM, AM, VIDEO, TV or CD/DVD)

⏏
Opens and closes the disc tray.

DSGX
Switches DSGX ON and OFF.

0-9 numerical buttons
Selects numbered options in a menu.

>10/ TV ENTER
Used to control TV.

SLOW ◀I/ TUNING-
For picture search or slow playback backward.
To tune in the desired station.

SLOW I▶/TUNING+
For picture search or slow playback forward.
To tune in the desired station.

Playback Control Buttons

- ▷ **(PLAY)**
  Starts playback.
- **II (PAUSE)**
  Pause playback or recording temporarily.
- **■ (STOP)**
  Stops playback.

DVD MENU
Accesses menu on a DVD disc.

DISPLAY
To display remaining time between Chapter and title.
To check the RDS service programme (PS).

VOLUME (+/-)
Adjusts speaker volume.

CLEAR
Removes a track number on the program menu.

RETURN
Returns the setup menu.

DIMMER
To change the brightness of the display window.

TV/VIDEO
Selects the TV's source.

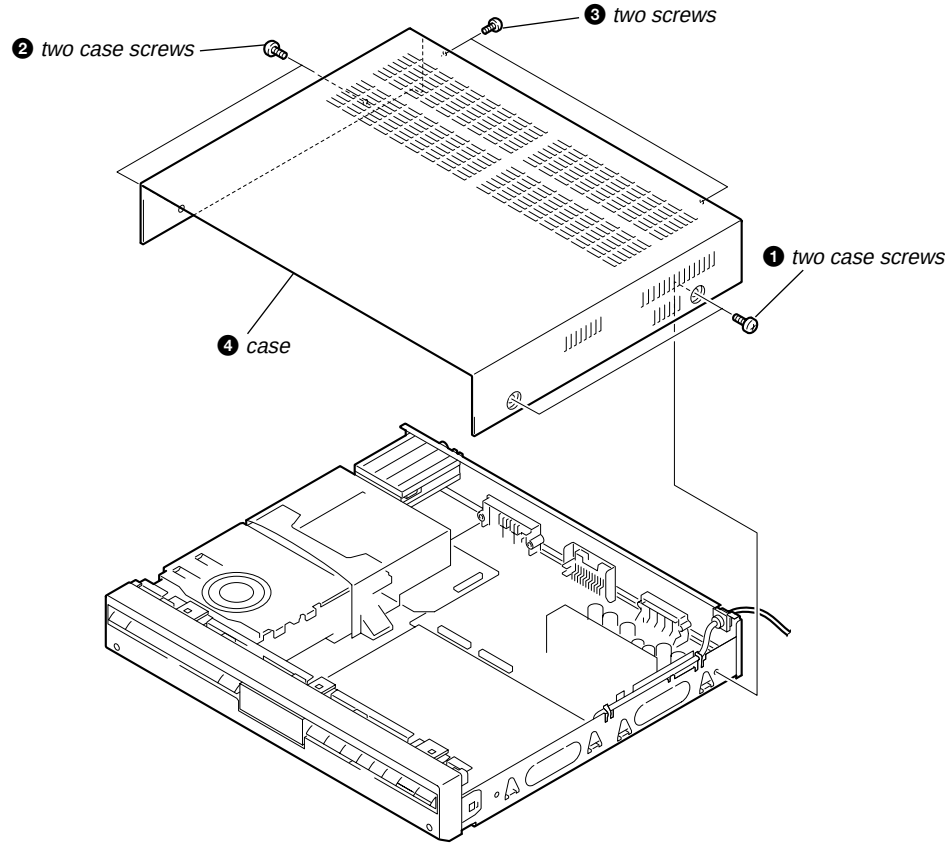
SECTION 3
DISASSEMBLY

- This set can be disassembled in the order shown below.
- [ ] : In order to remove set AMP board please remove POWER board and DVD board.

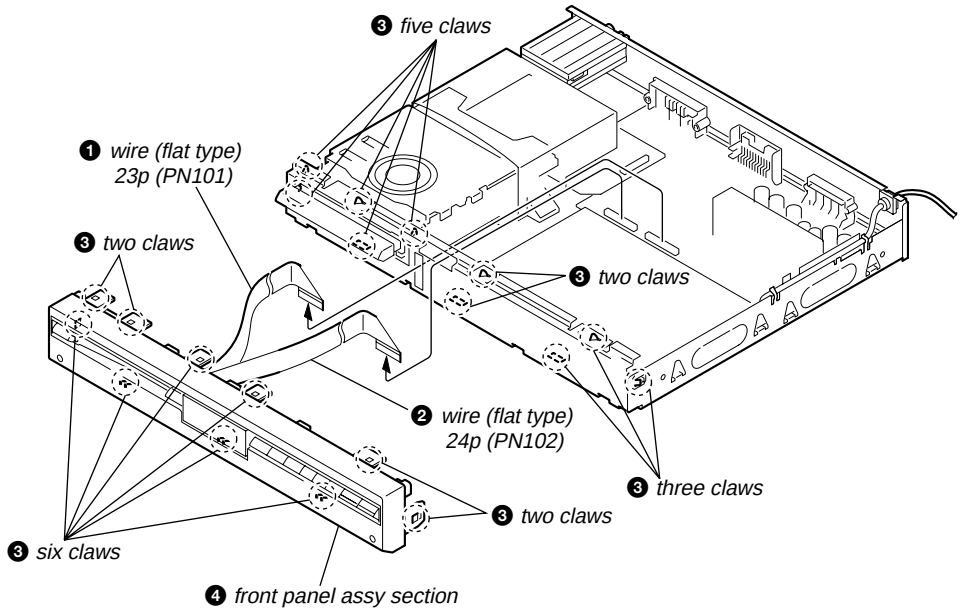
3-1. DISASSEMBLY FLOW

• Follow the disassembly procedure in the numerical order given.

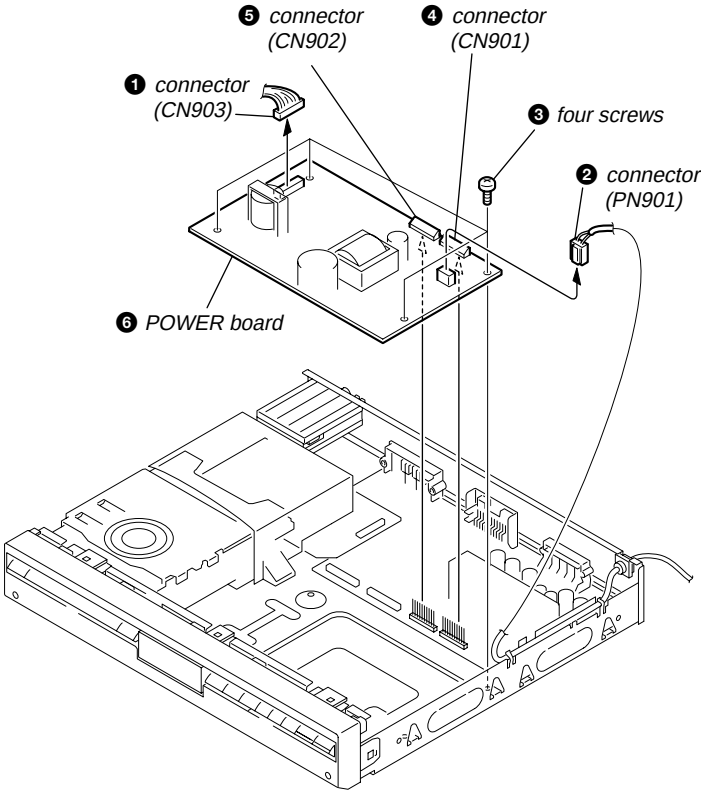
3-2. CASE



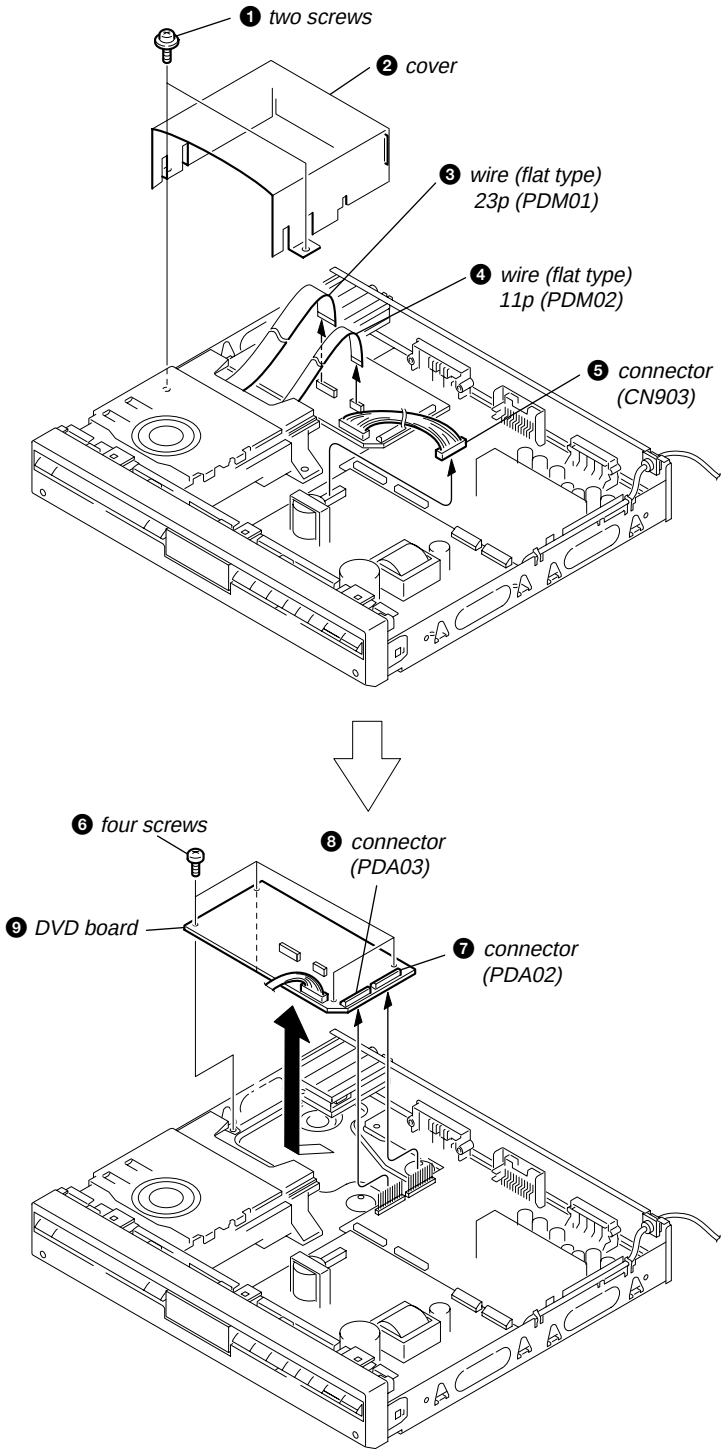
3-3. FRONT PANEL ASSY SECTION



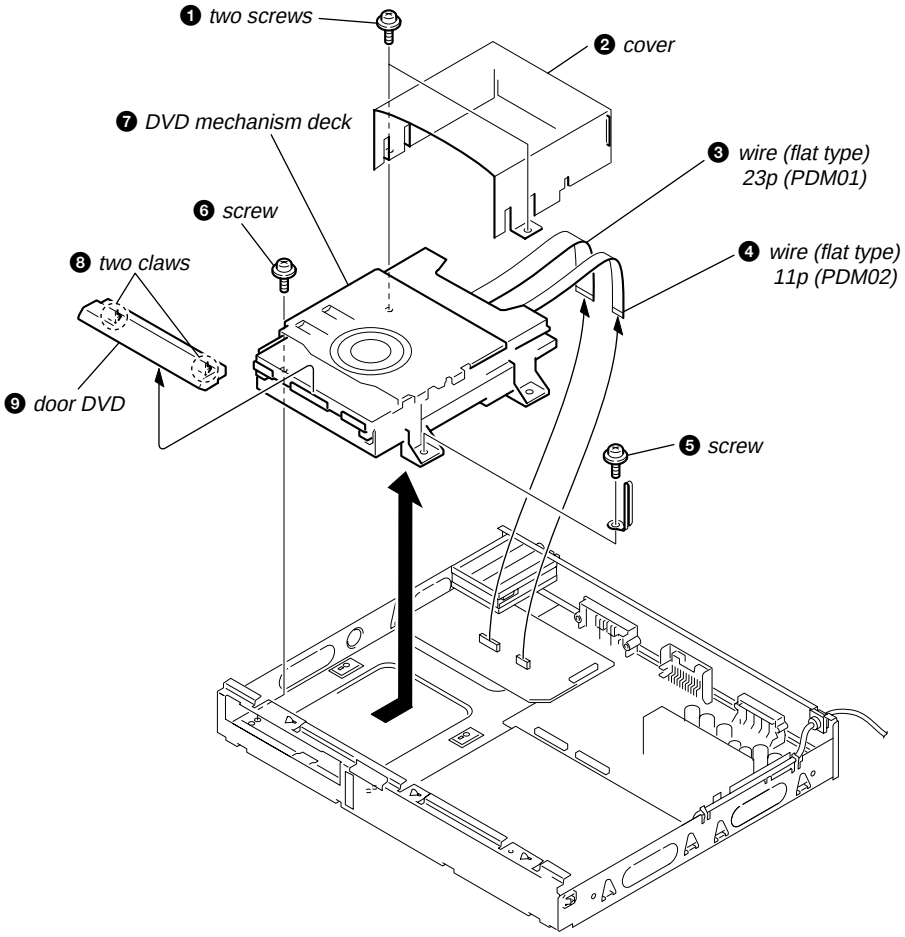
3-4. POWER BOARD



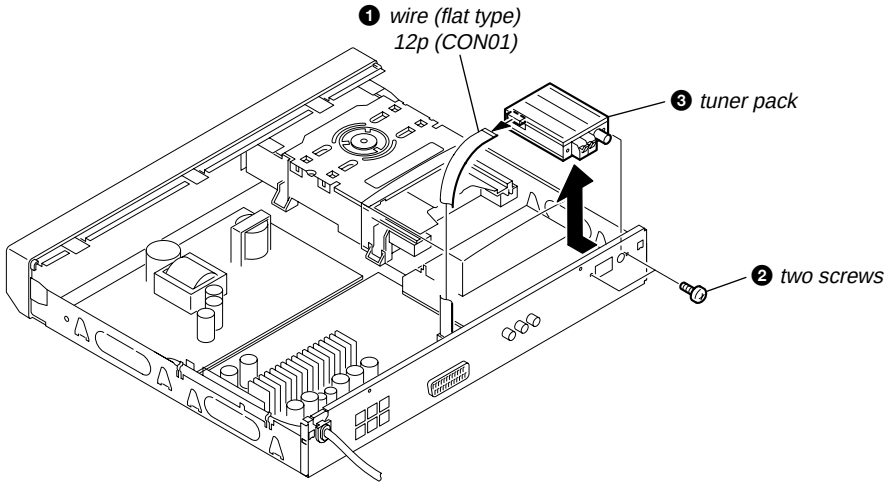
3-5. DVD BOARD


❶ two screws
❷ cover
❸ wire (flat type)
23p (PDM01)
❹ wire (flat type)
11p (PDM02)
❺ connector
(CN903)
❻ four screws
❽ connector
(PDA03)
❾ DVD board
❼ connector
(PDA02)

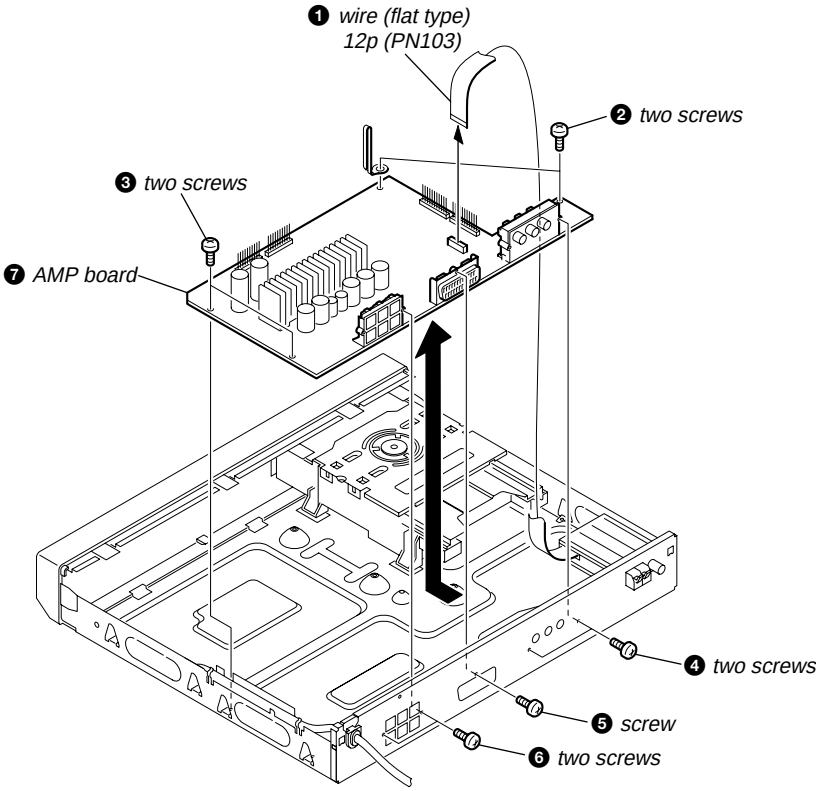
3-6. DVD MECHANISM DECK



3-7. TUNER PACK

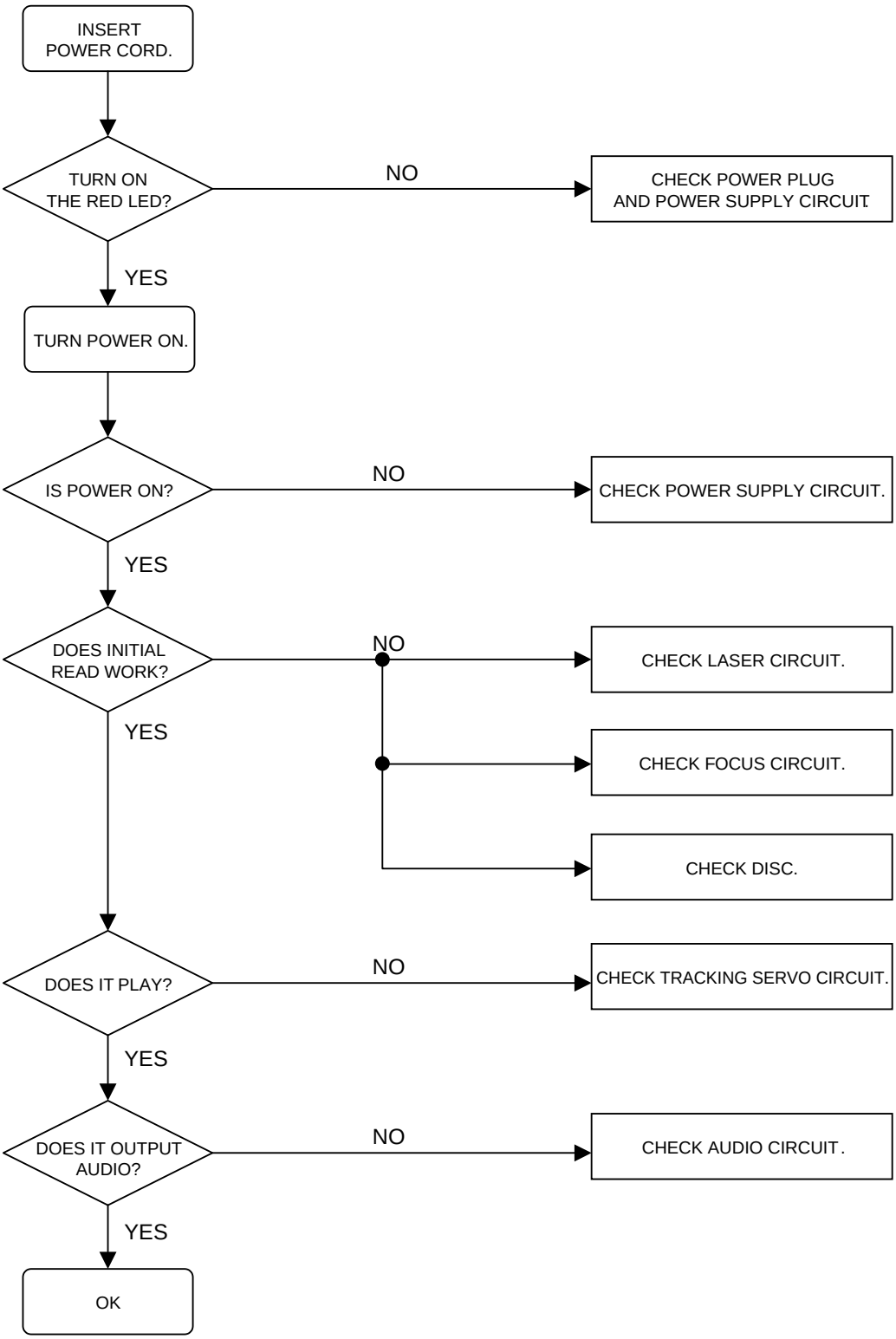


3-8. AMP BOARD

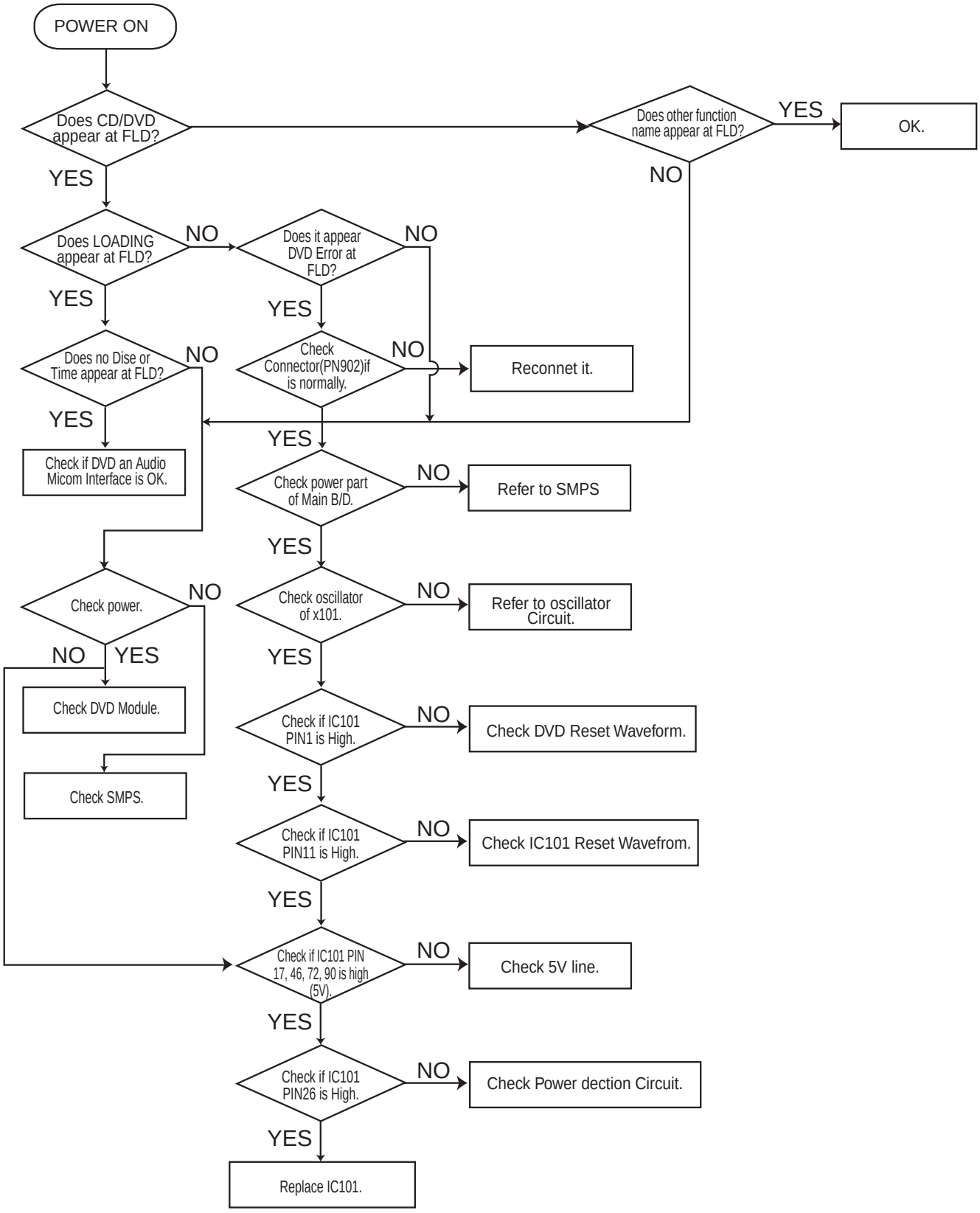

❶ wire (flat type)
12p (PN103)
❷ two screws
❸ two screws
❼ AMP board
❹ two screws
❺ screw
❻ two screws

SECTION 4
ELECTRICAL TROUBLE SHOOTING GUIDE

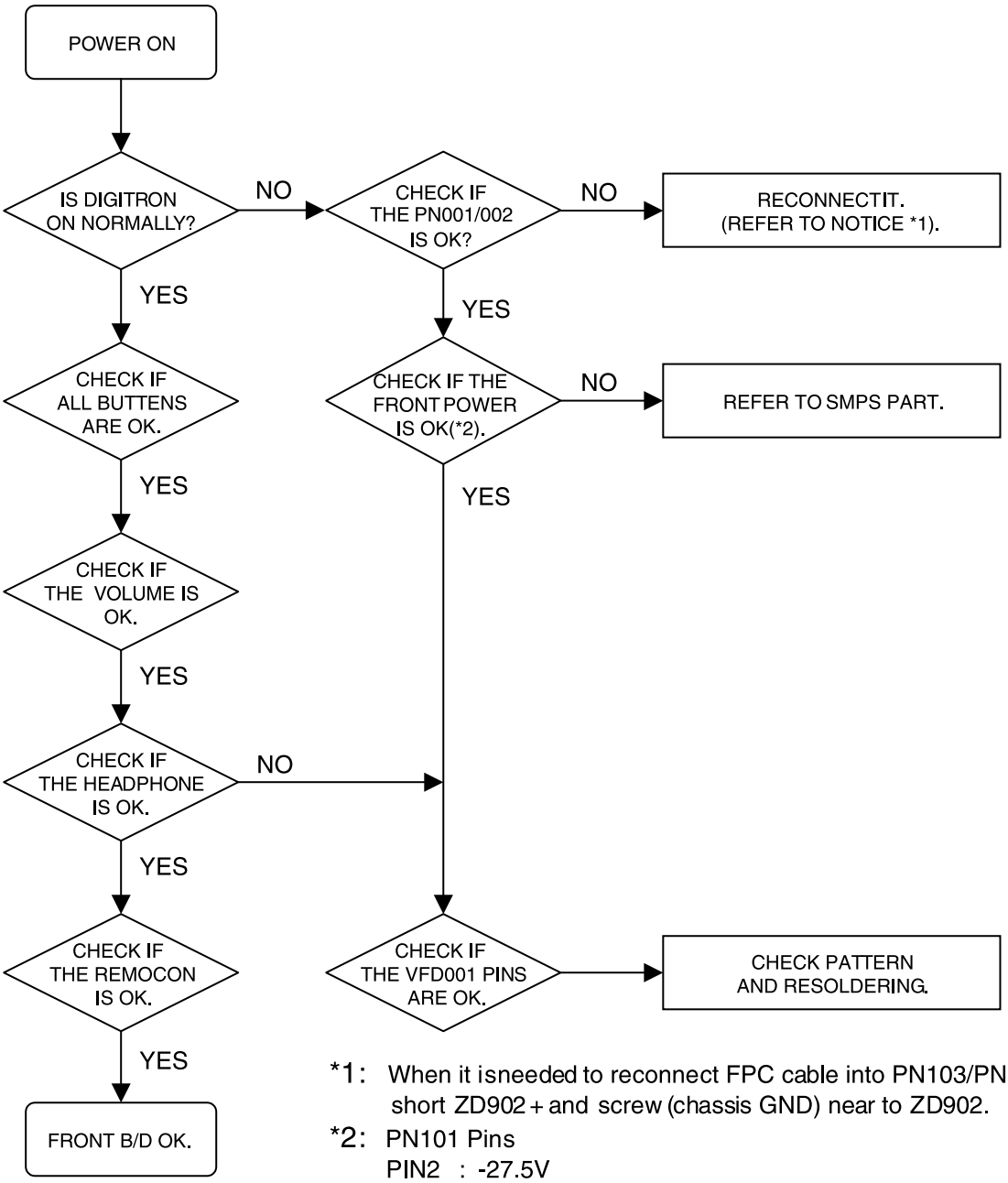
4-1. AUDIO PART
1. POWER CHECK FLOW



2. AUDIO μ.COM CIRCUIT



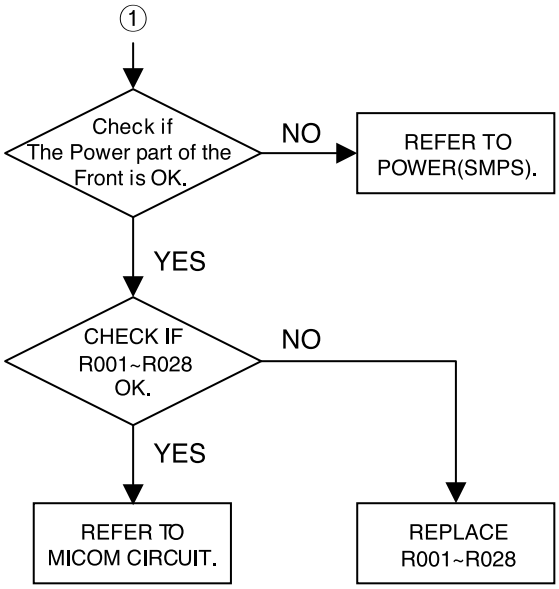
3. FRONT CIRCUIT (1/2)

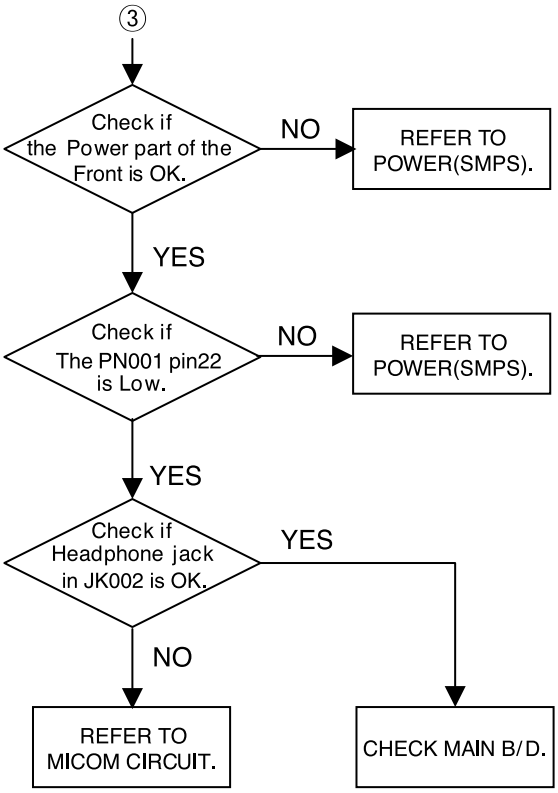


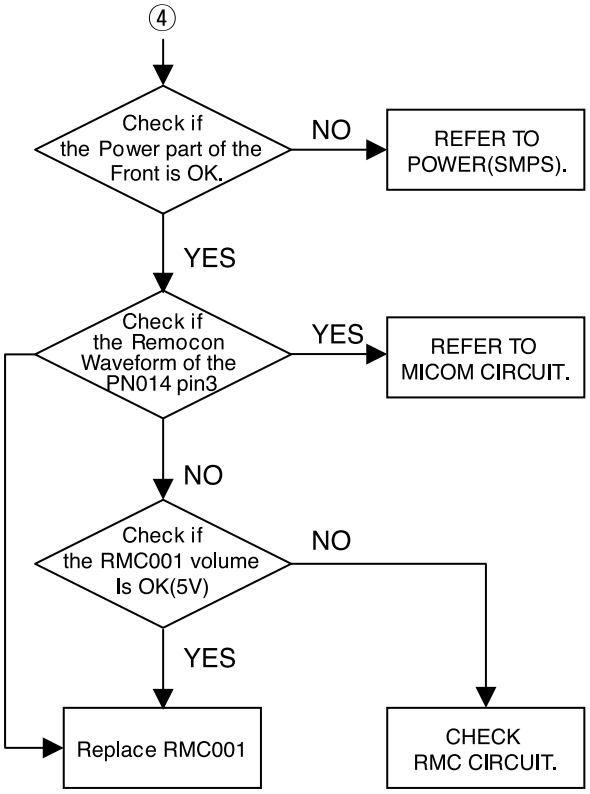
*1: When it isneeded to reconnect FPC cable into PN103/PN104, short ZD902+and screw (chassis GND) near to ZD902.

*2: PN101 Pins
PIN2 : -27.5V
PIN3 : -23.0V
PIN4 : 5.0V
PIN11 : -34.0V

4. FRONT CIRCUIT (2/2)

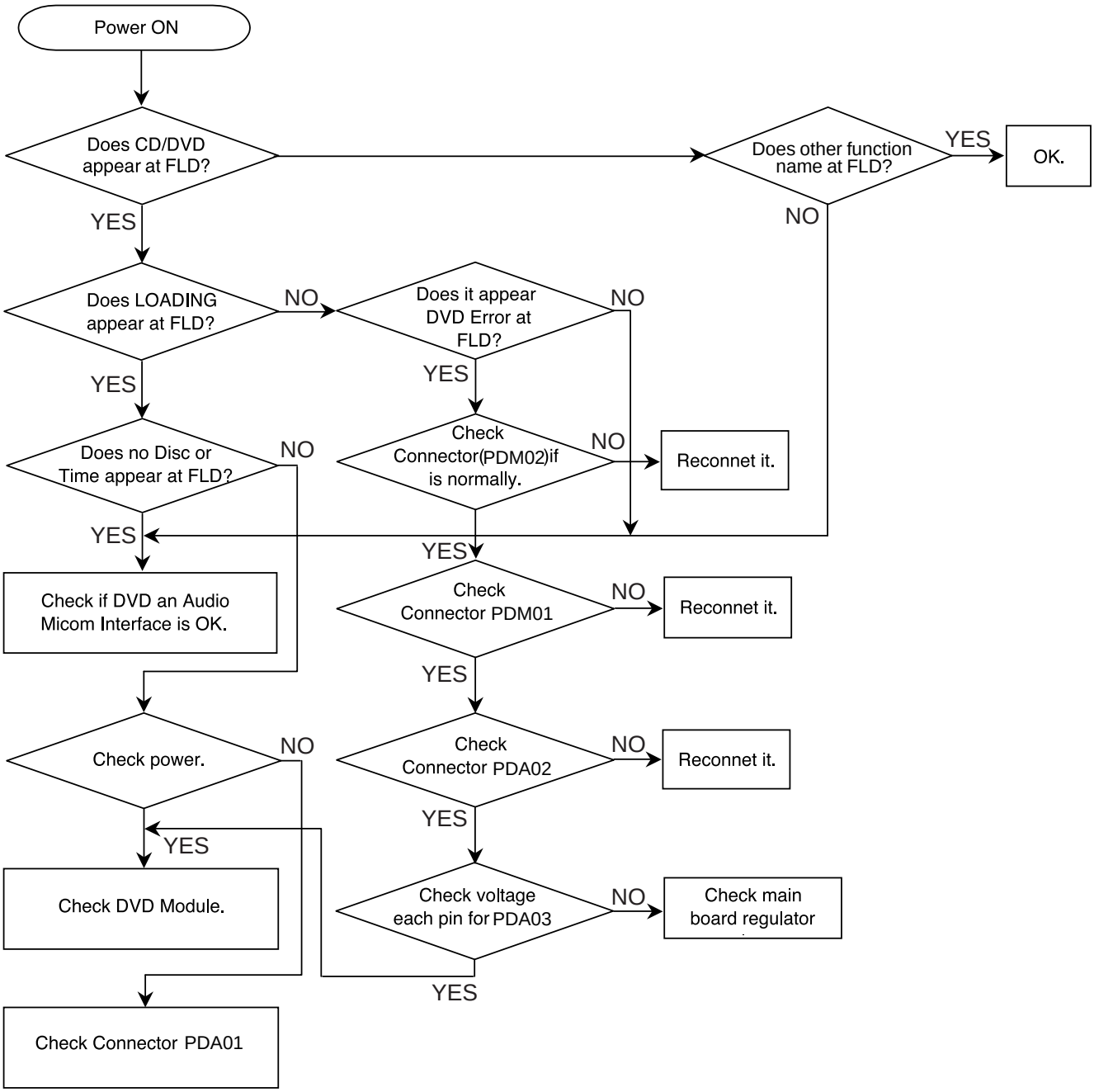




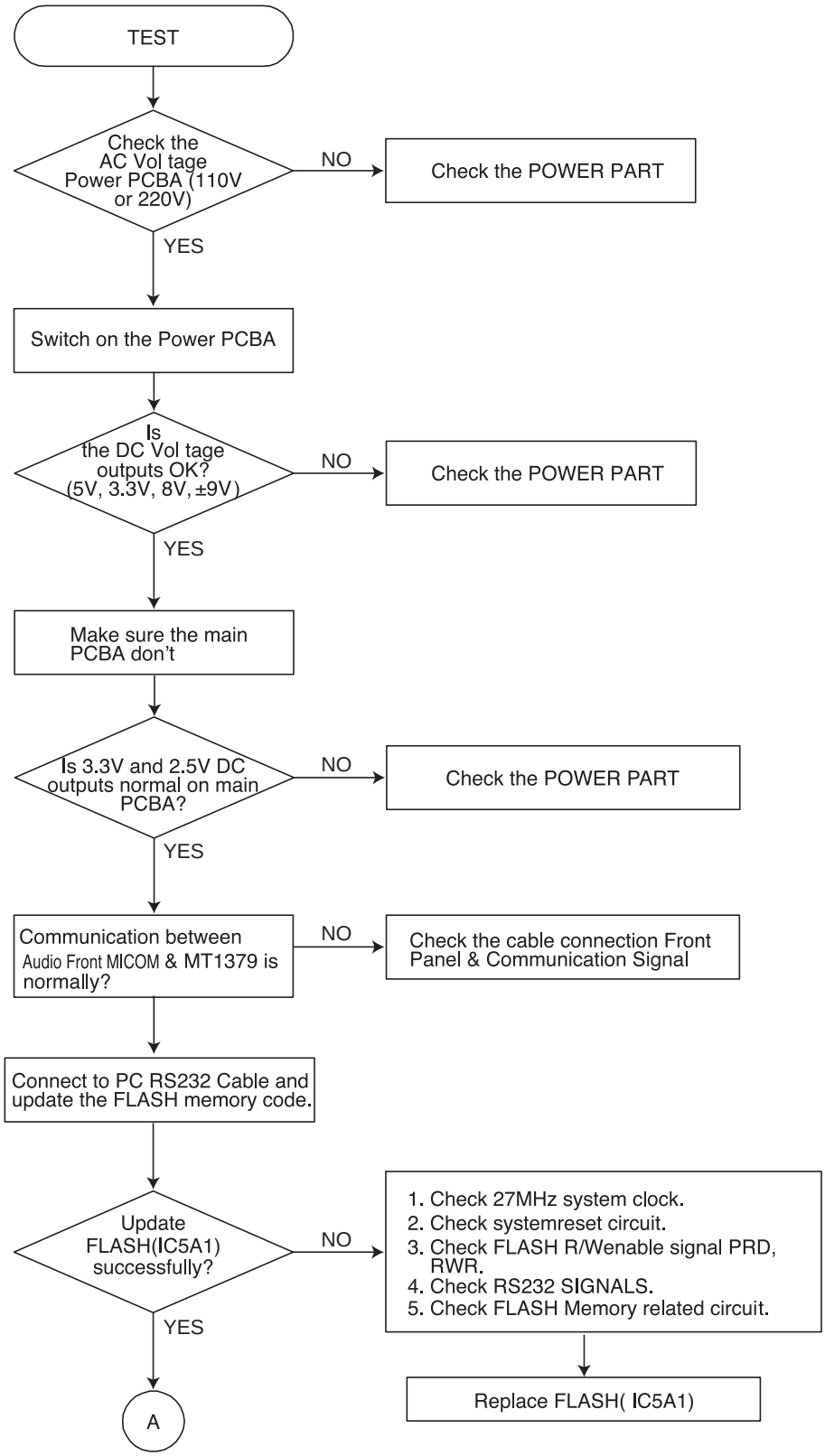


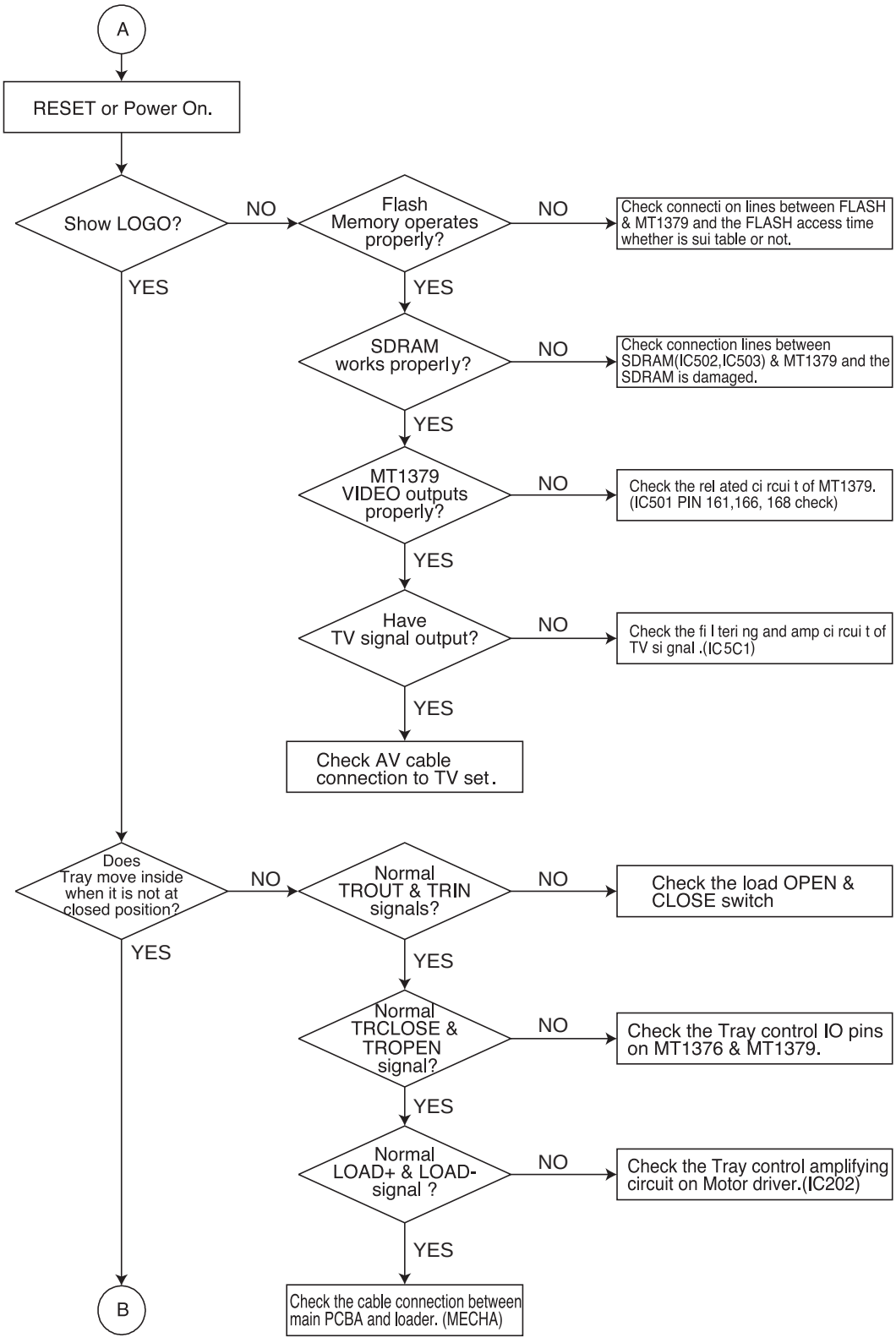
4-2. DVD PART

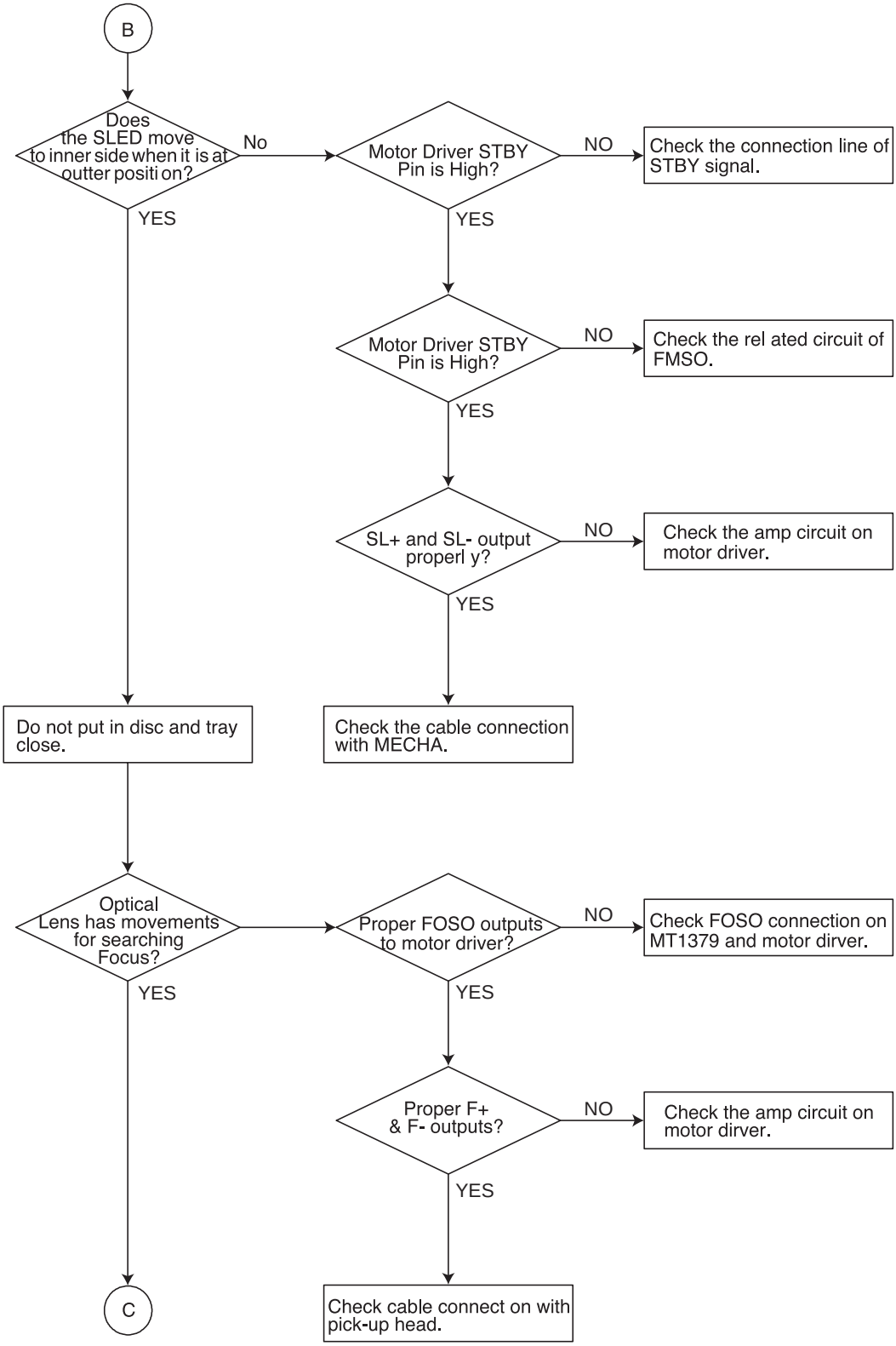
1. POWER CHECK FLOW

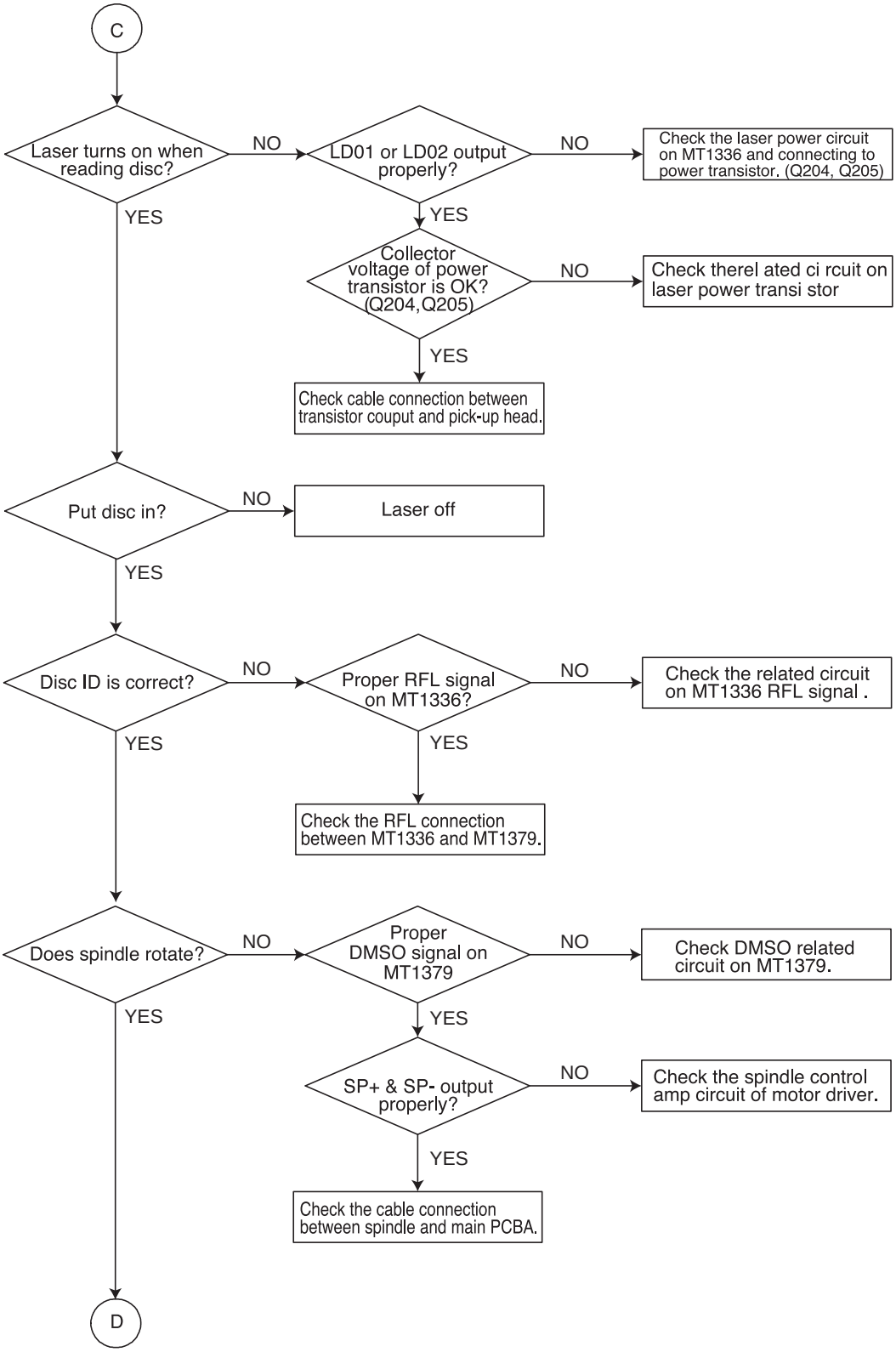


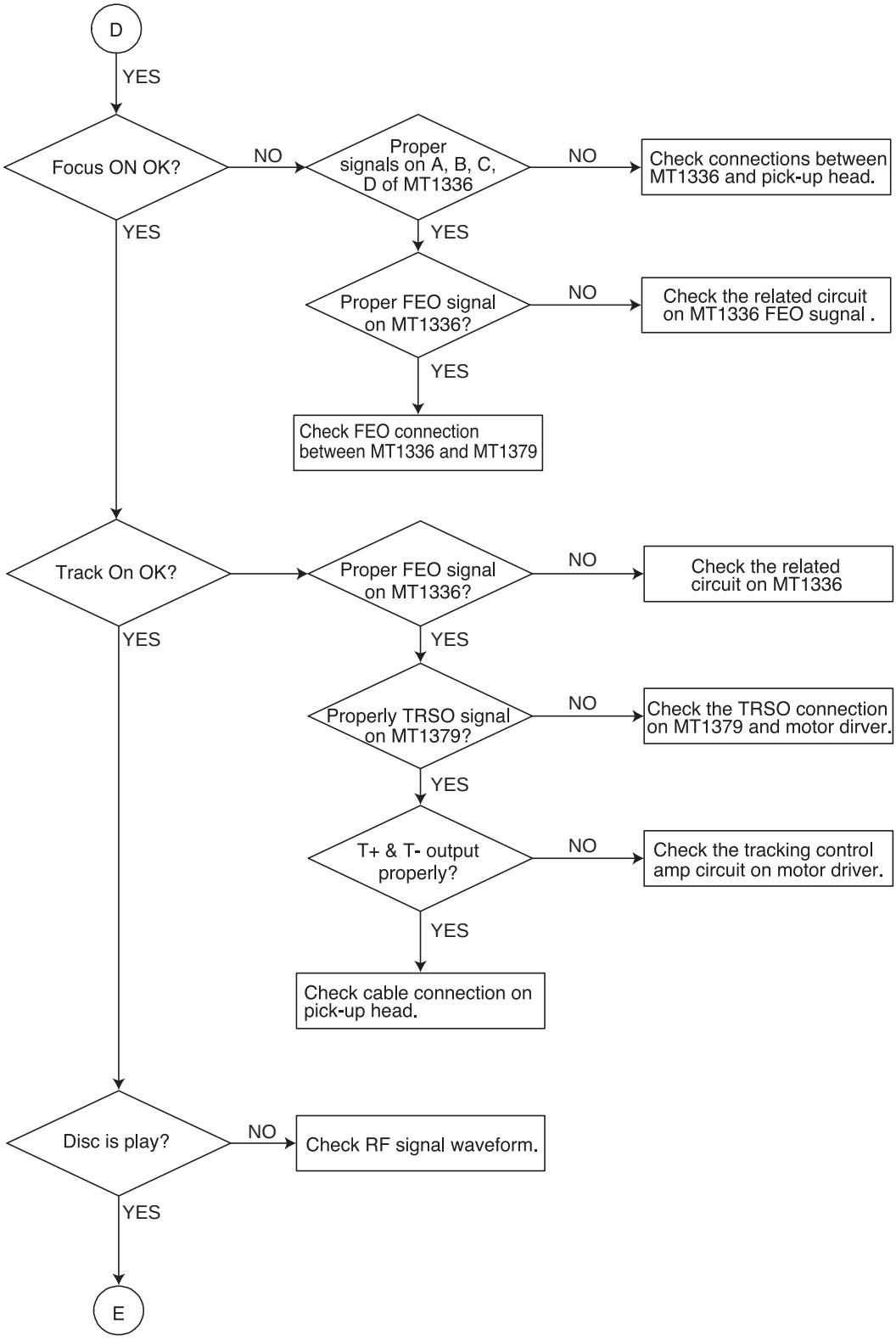
2. TEST & DEBUG FLOW

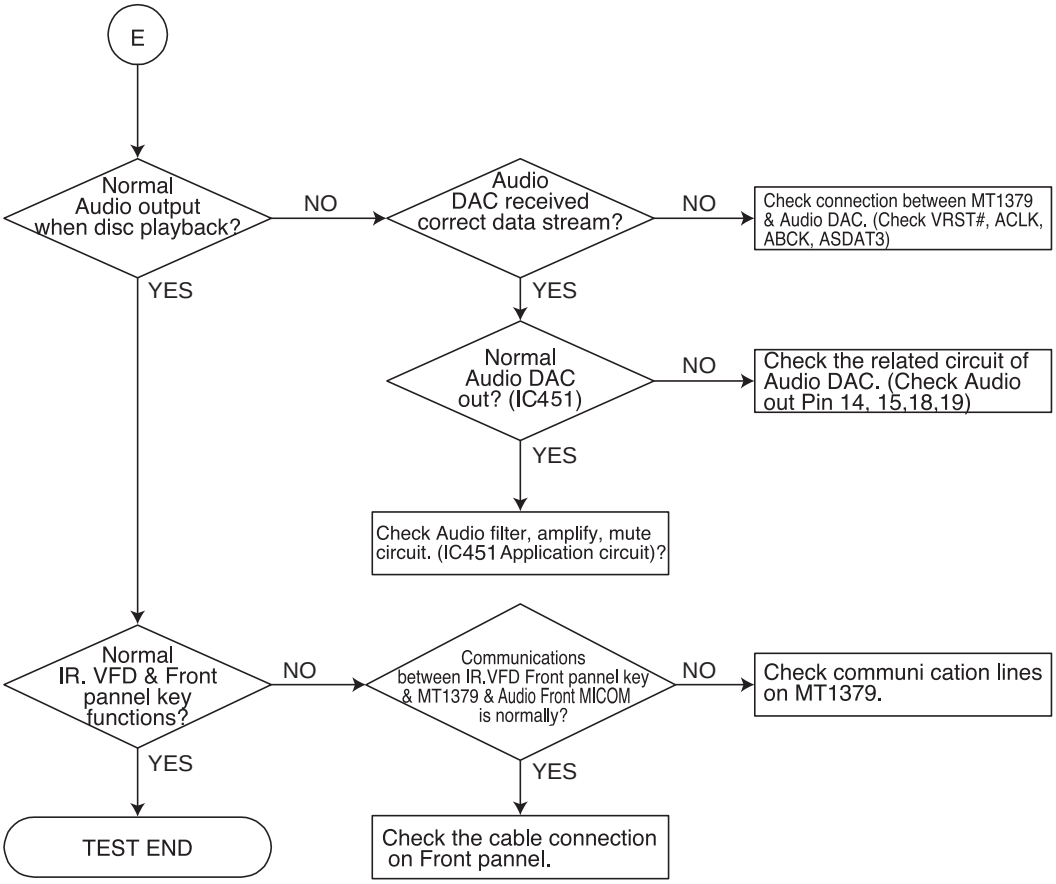

TEST
Check the AC Vol tage Power PCBA (110V or 220V)
NO
Check the POWER PART
YES
Switch on the Power PCBA
Is the DC Vol tage outputs OK? (5V, 3.3V, 8V, ±9V)
NO
Check the POWER PART
YES
Make sure the main PCBA don't
Is 3.3V and 2.5V DC outputs normal on main PCBA?
NO
Check the POWER PART
YES
Communication between Audio Front MICOM & MT1379 is normally?
NO
Check the cable connection Front Panel & Communication Signal
Connect to PC RS232 Cable and update the FLASH memory code.
Update FLASH(IC5A1) successfully?
NO
1. Check 27MHz system clock.
2. Check systemreset circuit.
3. Check FLASH R/Wenable signal PRD, RWR.
4. Check RS232 SIGNALS.
5. Check FLASH Memory related circuit.
Replace FLASH(IC5A1)
YES
A


A
RESET or Power On.
Show LOGO?
NO
Flash Memory operates properly?
NO
Check connecti on lines between FLASH & MT1379 and the FLASH access time whether is sui table or not.
YES
YES
SDRAM works properly?
NO
Check connection lines between SDRAM(IC502,IC503) & MT1379 and the SDRAM is damaged.
YES
MT1379 VIDEO outputs properly?
NO
Check the rel ated ci rcui t of MT1379. (IC501 PIN 161,166, 168 check)
YES
Have TV signal output?
NO
Check the fi l teri ng and amp ci rcui t of TV si gnal .(IC5C1)
YES
Check AV cable connection to TV set.
Does Tray move inside when it is not at closed position?
NO
Normal TROUT & TRIN signals?
NO
Check the load OPEN & CLOSE switch
YES
YES
Normal TRCLOSE & TROPEN signal?
NO
Check the Tray control IO pins on MT1376 & MT1379.
YES
Normal LOAD+ & LOAD- signal ?
NO
Check the Tray control amplifying circuit on Motor driver.(IC202)
YES
B
Check the cable connection between main PCBA and loader. (MECHA)


B
Does the SLED move to inner side when it is at outter positi on?
No
YES
Motor Driver STBY Pin is High?
NO
Check the connection line of STBY signal.
YES
Motor Driver STBY Pin is High?
NO
Check the rel ated circuit of FMSO.
YES
SL+ and SL- output properl y?
NO
Check the amp circuit on motor driver.
YES
Do not put in disc and tray close.
Check the cable connection with MECHA.
Optical Lens has movements for searching Focus?
Proper FOSO outputs to motor driver?
NO
Check FOSO connection on MT1379 and motor dirver.
YES
YES
Proper F+ & F- outputs?
NO
Check the amp circuit on motor dirver.
YES
C
Check cable connect on with pick-up head.


C
Laser turns on when reading disc?
NO
LD01 or LD02 output properly?
NO
Check the laser power circuit on MT1336 and connecting to power transistor. (Q204, Q205)
YES
YES
Collector voltage of power transistor is OK? (Q204,Q205)
NO
Check therel ated ci rcuit on laser power transi stor
YES
Check cable connection between transistor couput and pick-up head.
Put disc in?
NO
Laser off
YES
Disc ID is correct?
NO
Proper RFL signal on MT1336?
NO
Check the related circuit on MT1336 RFL signal .
YES
YES
Check the RFL connection between MT1336 and MT1379.
Does spindle rotate?
NO
Proper DMSO signal on MT1379
NO
Check DMSO related circuit on MT1379.
YES
YES
SP+ & SP- output properly?
NO
Check the spindle control amp circuit of motor driver.
YES
Check the cable connection between spindle and main PCBA.
D

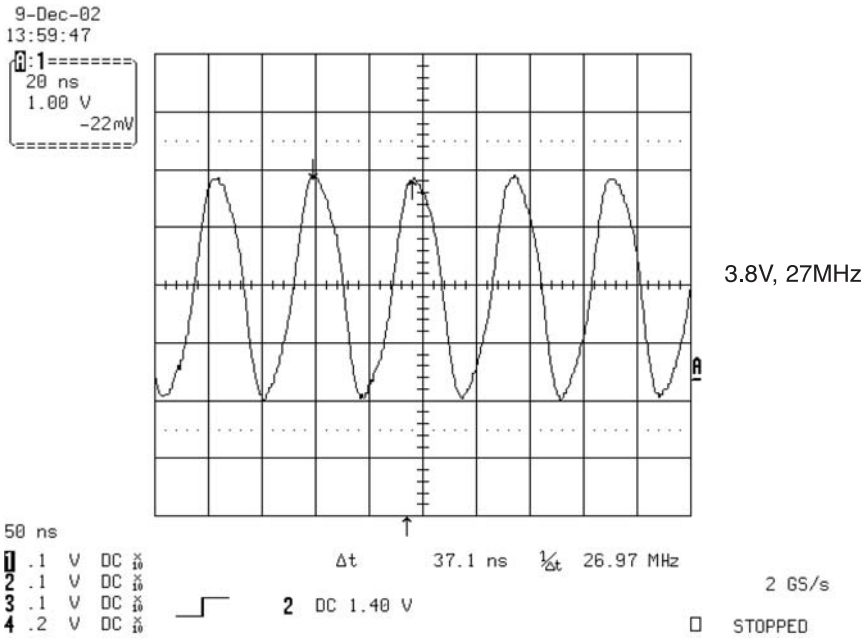

D
YES
Focus ON OK?
NO
Proper signals on A, B, C, D of MT1336
NO
Check connections between MT1336 and pick-up head.
YES
YES
Proper FEO signal on MT1336?
NO
Check the related circuit on MT1336 FEO sugnal .
YES
Check FEO connection between MT1336 and MT1379
Track On OK?
Proper FEO signal on MT1336?
NO
Check the related circuit on MT1336
YES
YES
Properly TRSO signal on MT1379?
NO
Check the TRSO connection on MT1379 and motor dirver.
YES
T+ & T- output properly?
NO
Check the tracking control amp circuit on motor driver.
YES
Check cable connection on pick-up head.
Disc is play?
NO
Check RF signal waveform.
YES
E


E
Normal Audio output when disc playback?
NO
Audio DAC received correct data stream?
NO
Check connection between MT1379 & Audio DAC. (Check VRST#, ACLK, ABCK, ASDAT3)
YES
YES
Normal Audio DAC out? (IC451)
NO
Check the related circuit of Audio DAC. (Check Audio out Pin 14, 15,18,19)
YES
Check Audio filter, amplify, mute circuit. (IC451 Application circuit)?
Normal IR. VFD & Front pannel key functions?
NO
Communications between IR.VFD Front pannel key & MT1379 & Audio Front MICOM is normally?
NO
Check communi cation lines on MT1379.
YES
YES
TEST END
Check the cable connection on Front pannel.

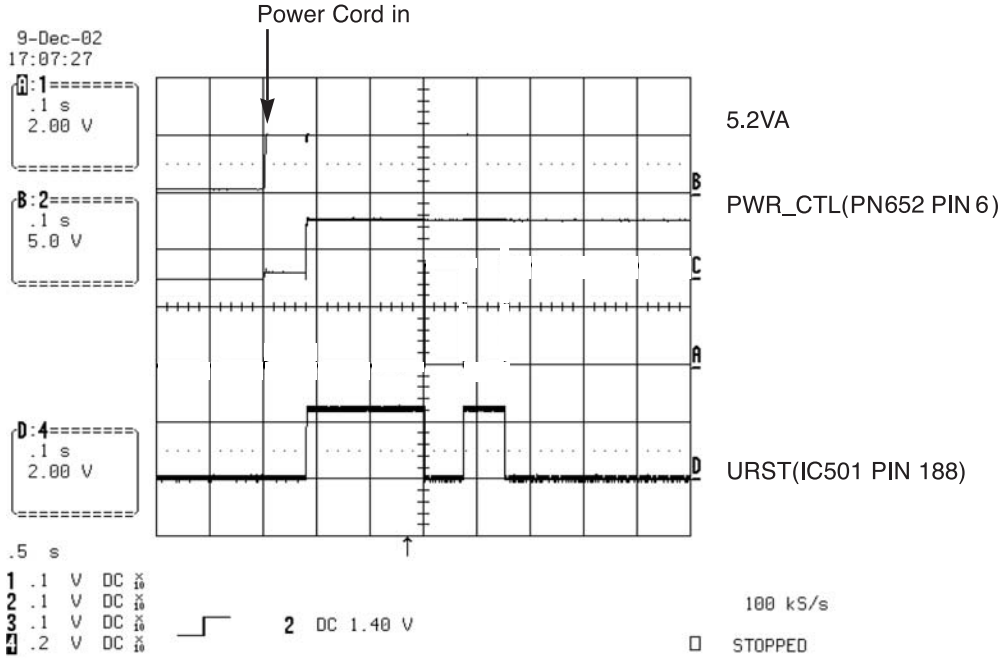
4-3. DETAILS AND WAVEFORMS ON SYSTEM TEST AND DEBUGGING

1. SYSTEM 27MHz CLOCK, RESET, FLASH R/W SIGNAL

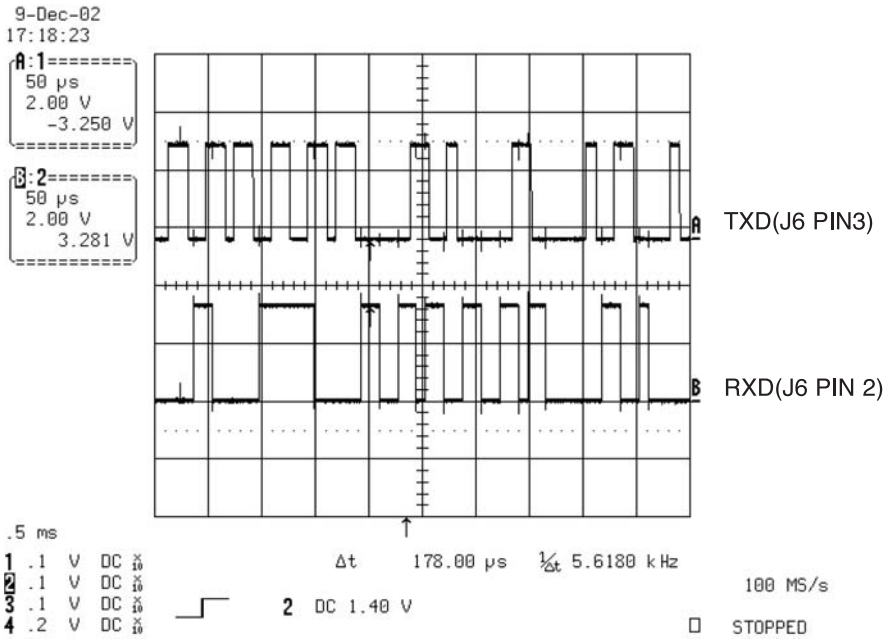
1) MT1379 main clock is at 27MHz (X501)



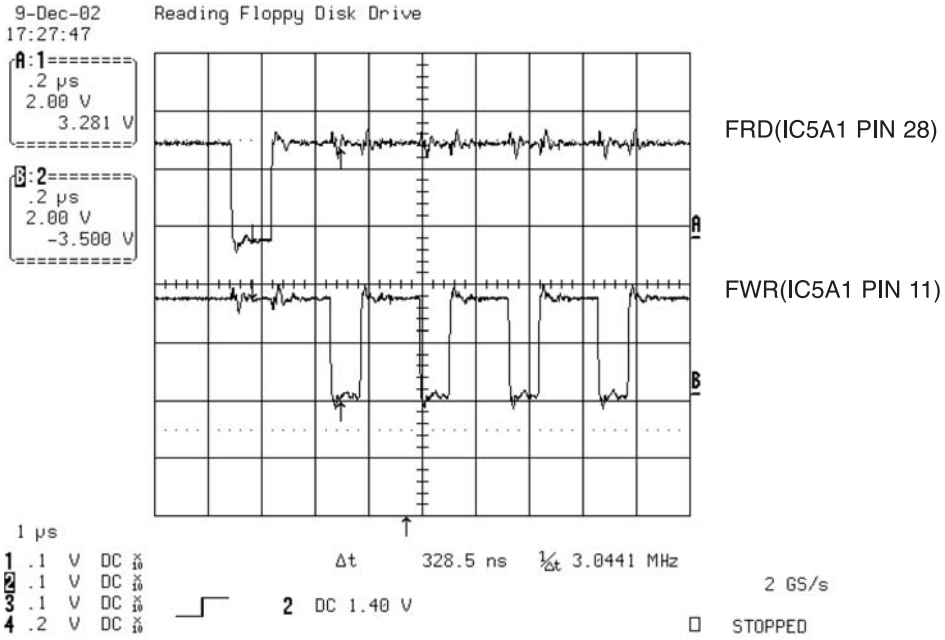
2) MT1336 reset is high active



3) RS232 waveform during procedure (Downloading)

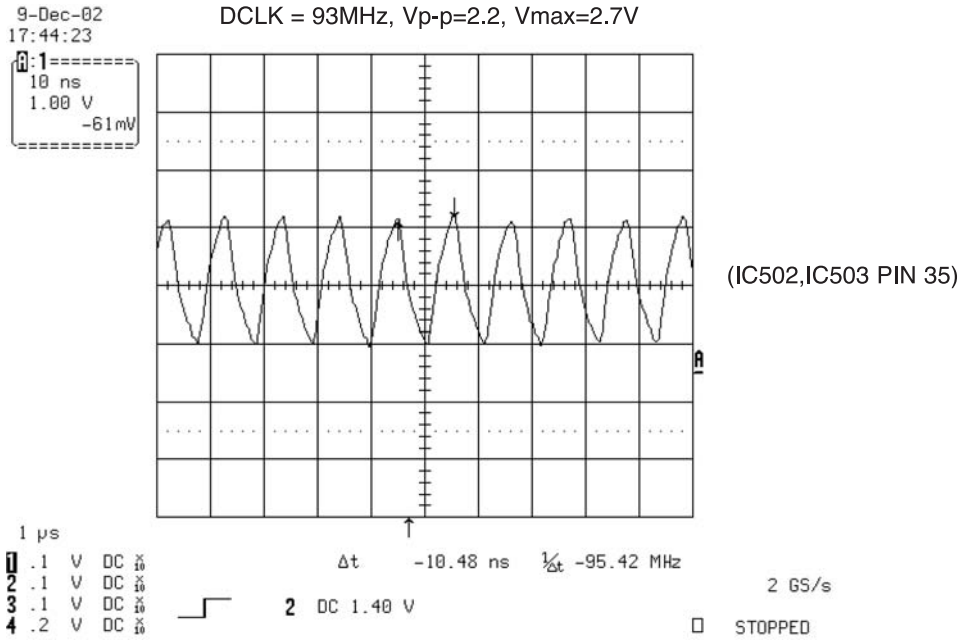


4) Flash R/W enable signal during download (Downloading)



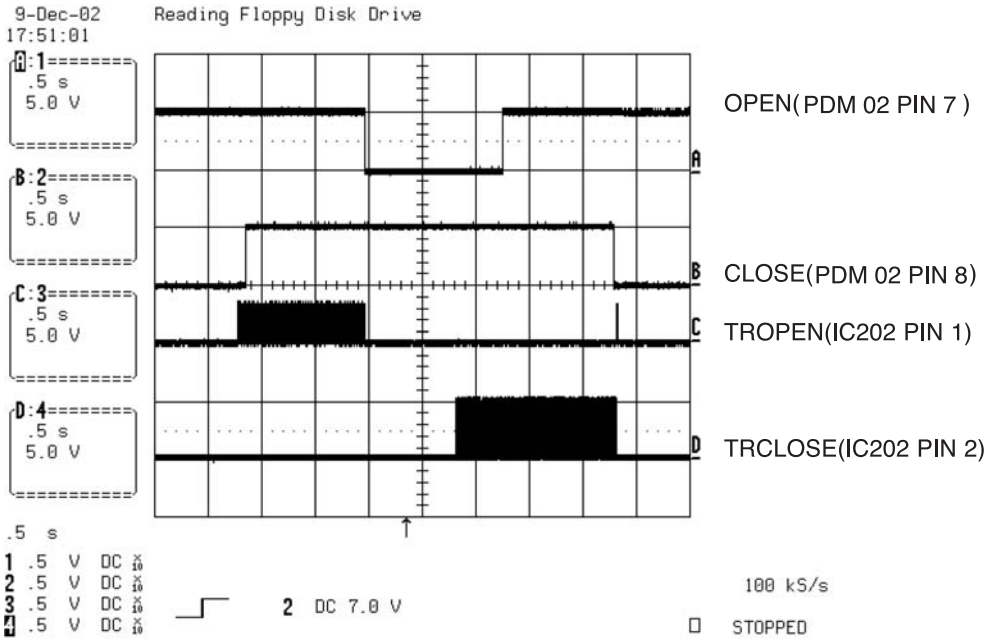
2. SDRAM CLOCK

1) MT1379 main clock is at 27MHz (X501)

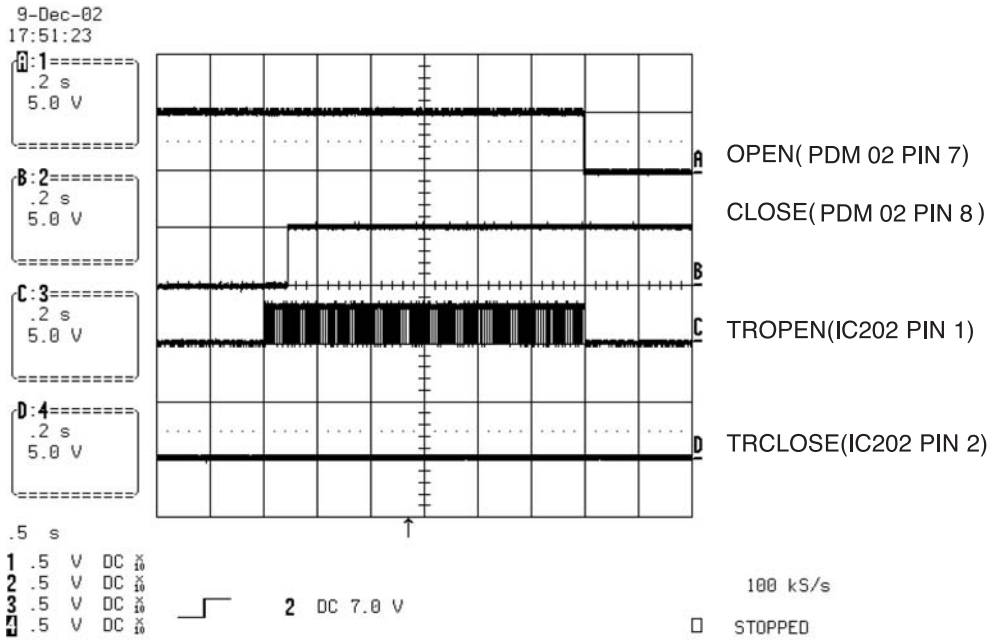


3. TRAY OPEN/CLOSE SIGNAL

1) Tray open/close waveform



2) Tray close waveform



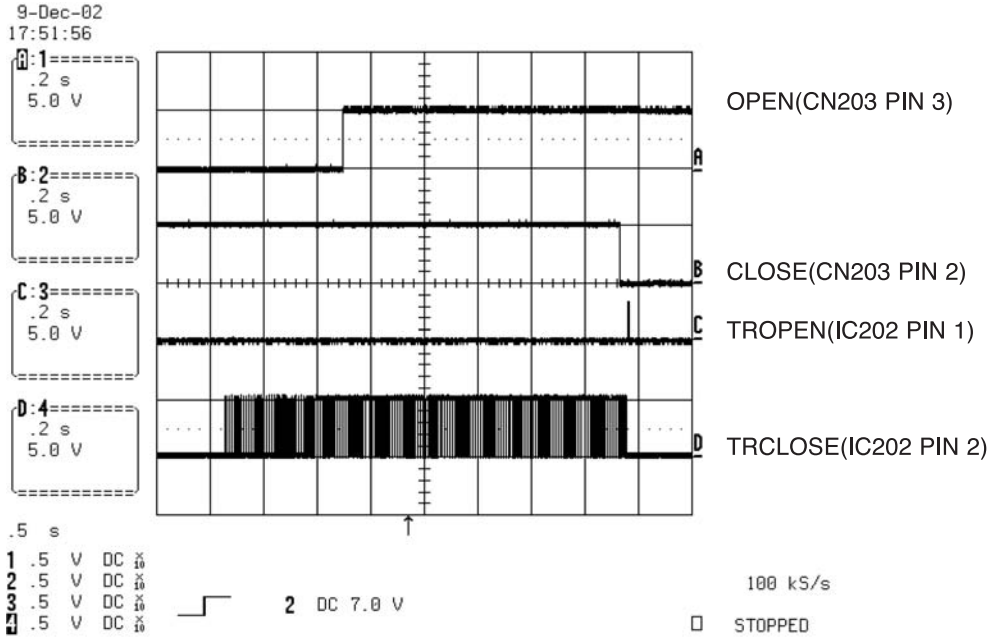
OPEN(PDM 02 PIN 7)

CLOSE(PDM 02 PIN 8)

TROPEN(IC202 PIN 1)

TRCLOSE(IC202 PIN 2)

3) Tray open waveform



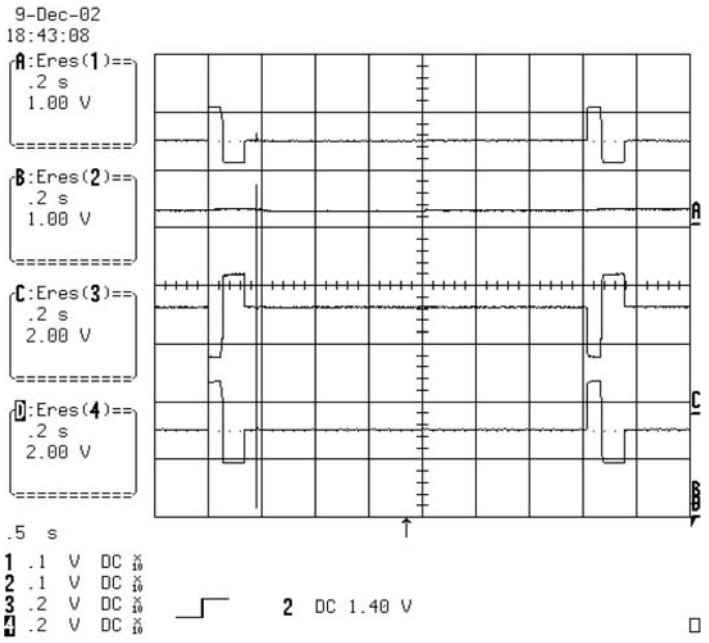
OPEN(CN203 PIN 3)

CLOSE(CN203 PIN 2)

TROPEN(IC202 PIN 1)

TRCLOSE(IC202 PIN 2)

4. SLED CONTROL RELATED SIGNAL (NO DISC CONDITION)



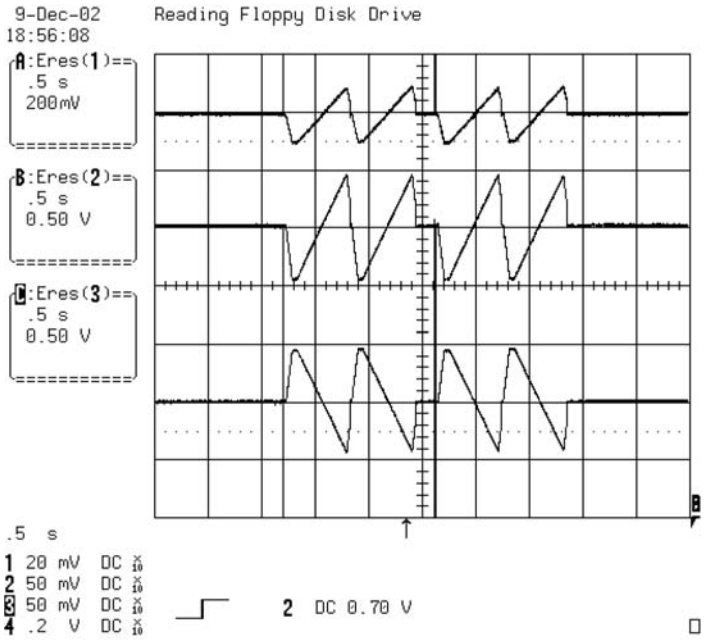
FMSO(2.0V/1.4V/1.0V)
(IC501 PIN 19)

STBY(5V) – (IC201 PIN 50)

SL+(4.7V/3.6V/1.9V)
(IC202 PIN 12)

SL-(5.3V/3.7V/2.5V)
(IC202 PIN 13)

5. LENS CONTROL RELATED SIGNAL (NO DISC CONDITION)

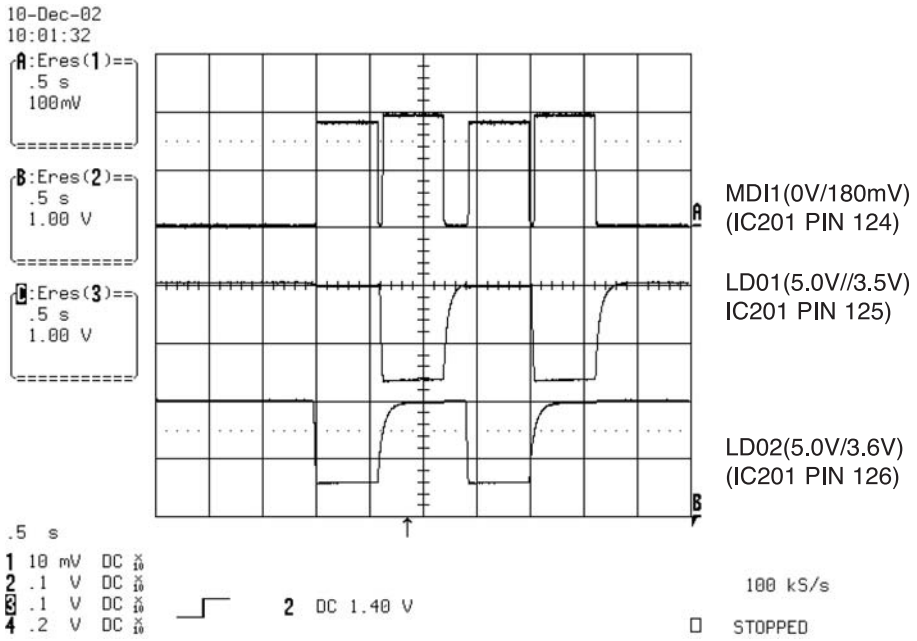


FOSO(1.5V/1.4V/1.3V)
(IC501 PIN 12)

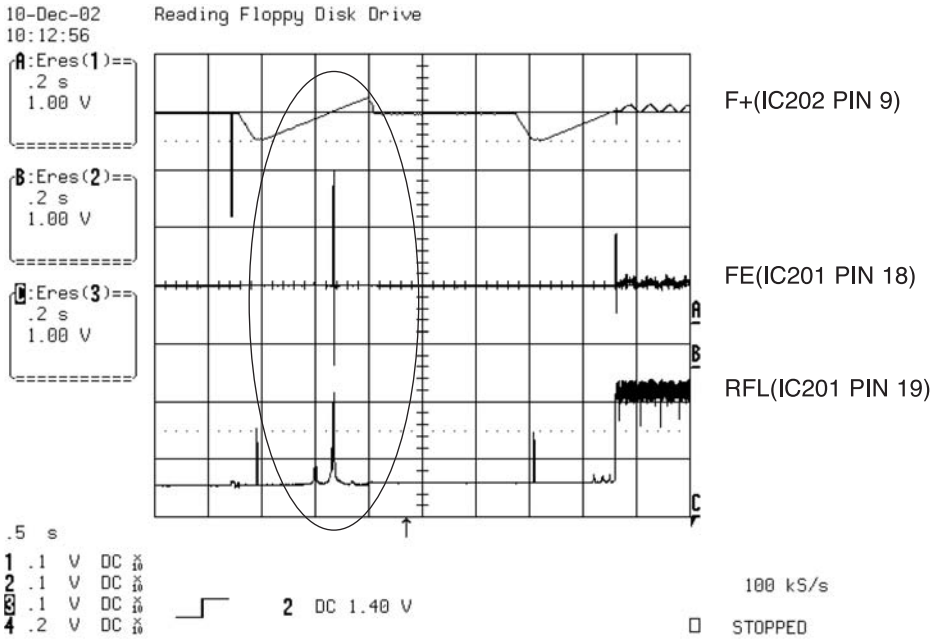
F+(4.0V/3.6V/3.2V)
(IC202 PIN 9)

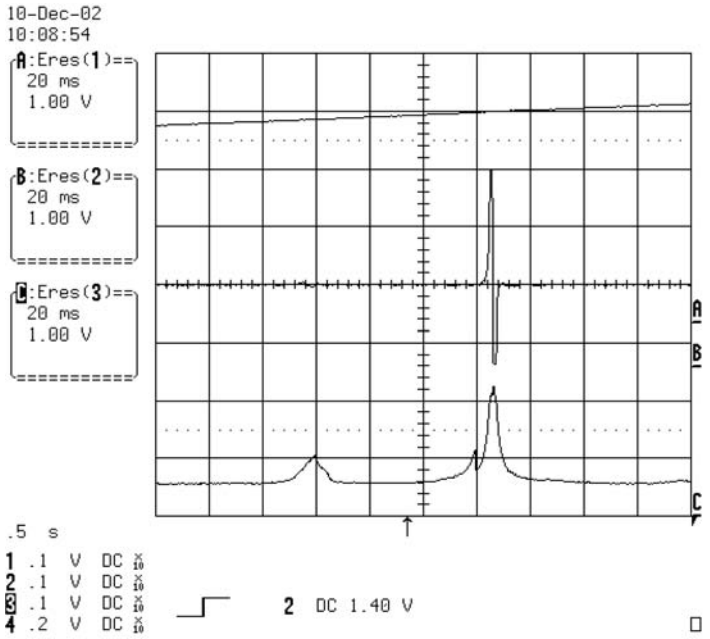
F-(4.0V/3.6V/3.2V)
(IC202 PIN 8)

6. LASER POWER CONTROL RELATED SIGNAL (NO DISC CONDITION)



7. DISC TYPE JUDGEMENT WAVEFORM

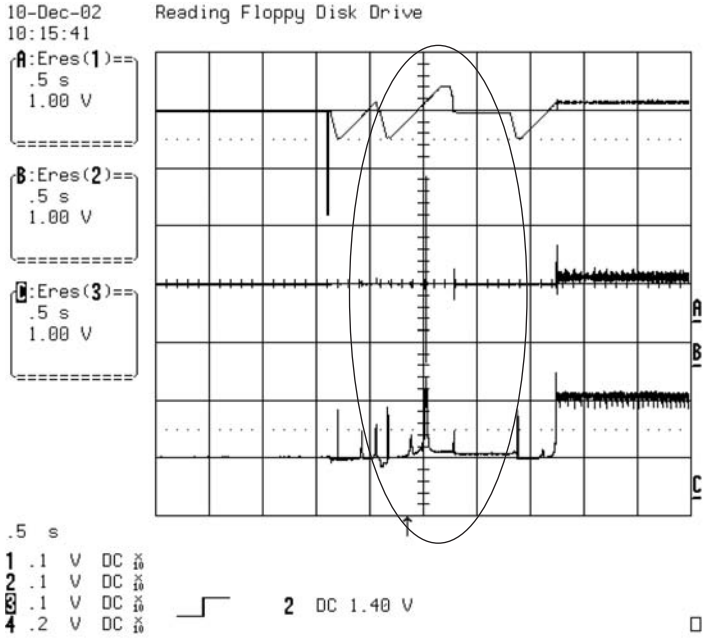




F+(IC202 PIN 9)

FE(IC201 PIN 18)

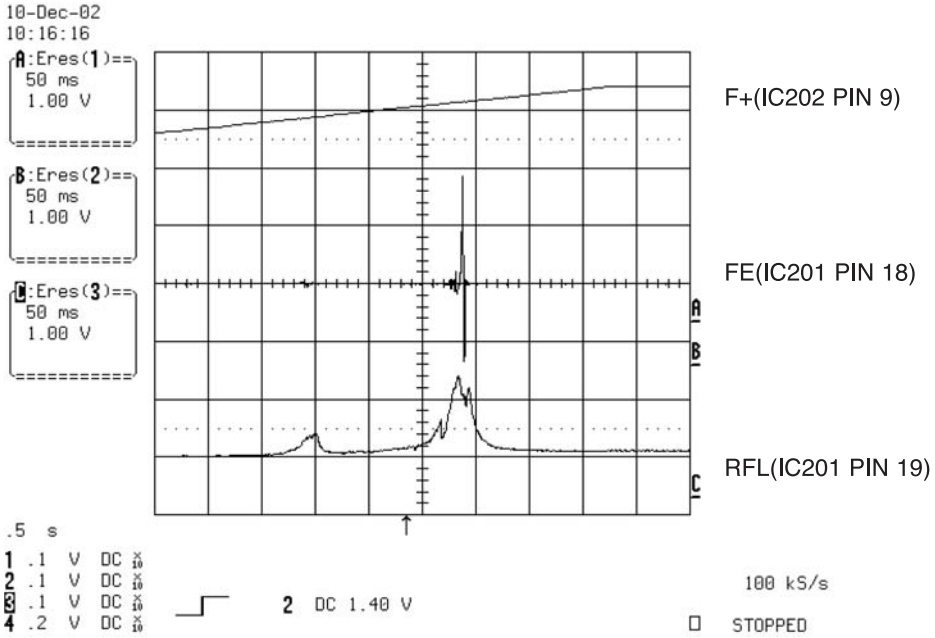
RFL(IC201 PIN 19)



F+(IC202 PIN 9)

FE(IC201 PIN 18)

RFL(IC201 PIN 19)

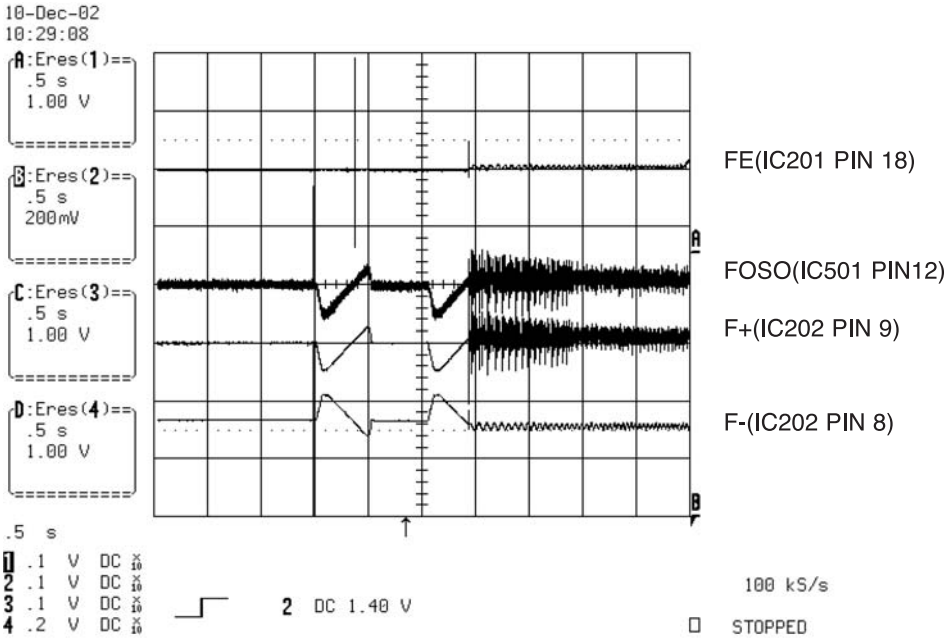


F+(IC202 PIN 9)

FE(IC201 PIN 18)

RFL(IC201 PIN 19)

8. FOCUS ON WAVEFORM

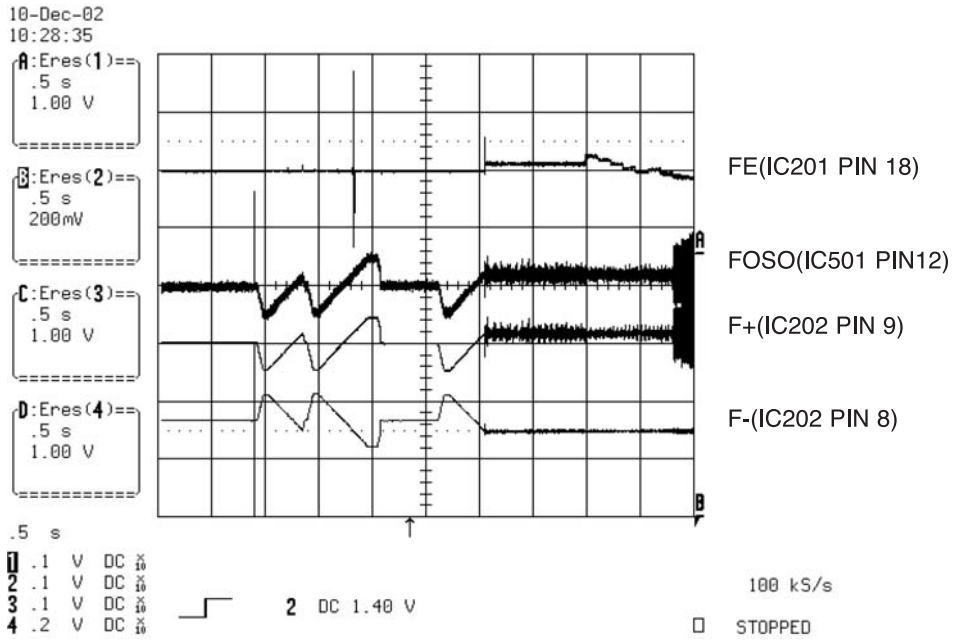


FE(IC201 PIN 18)

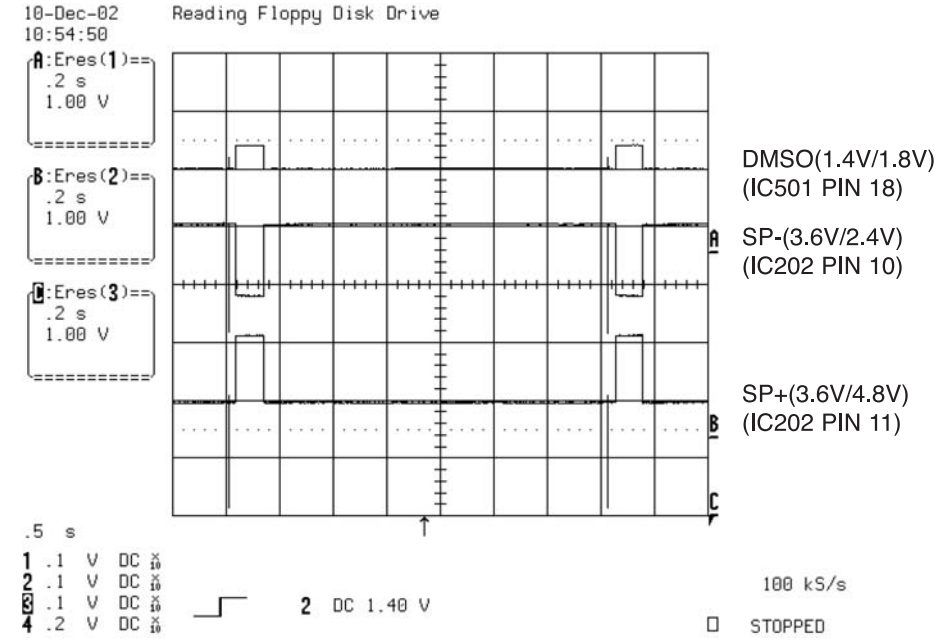
FOSO(IC501 PIN12)

F+(IC202 PIN 9)

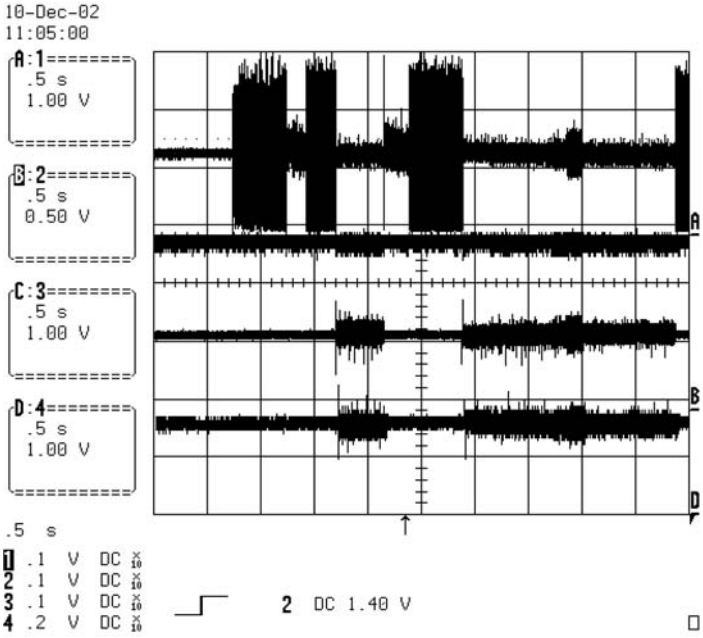
F-(IC202 PIN 8)



9. SPINDLE CONTROL WAVEFORM (NO DISC CONDITION)



10. TRACKING CONTROL RELATED SIGNAL (SYSTEM CHECKING)

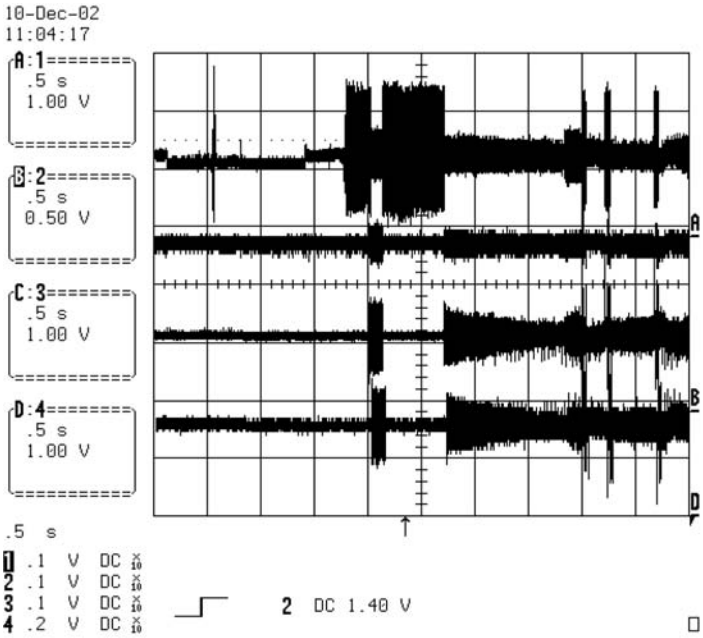


TE(IC201 PIN 21)

TRSO(IC501 PIN 13)

T-(IC202 PIN 7)

T+(IC202 PIN 6)



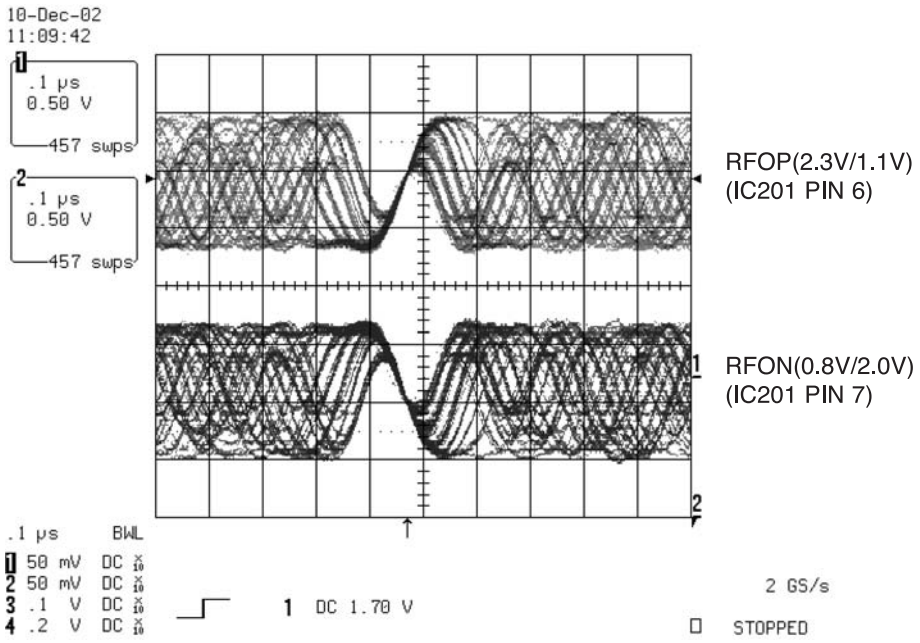
TE(IC201 PIN 21)

TRSO(IC501 PIN 13)

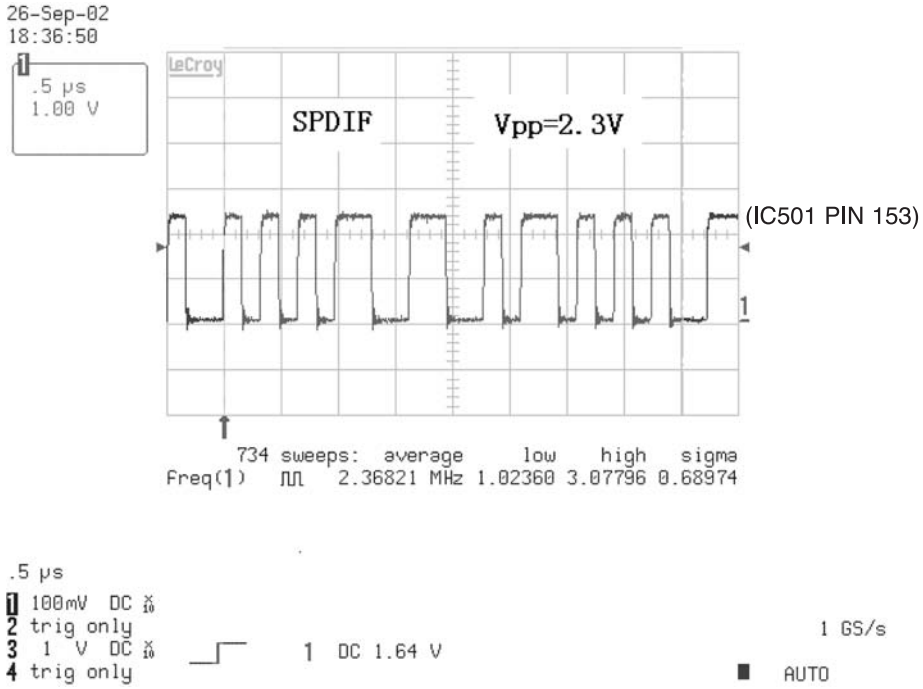
T-(IC202 PIN 7)

T+(IC202 PIN 6)

11. RF WAVEFORM

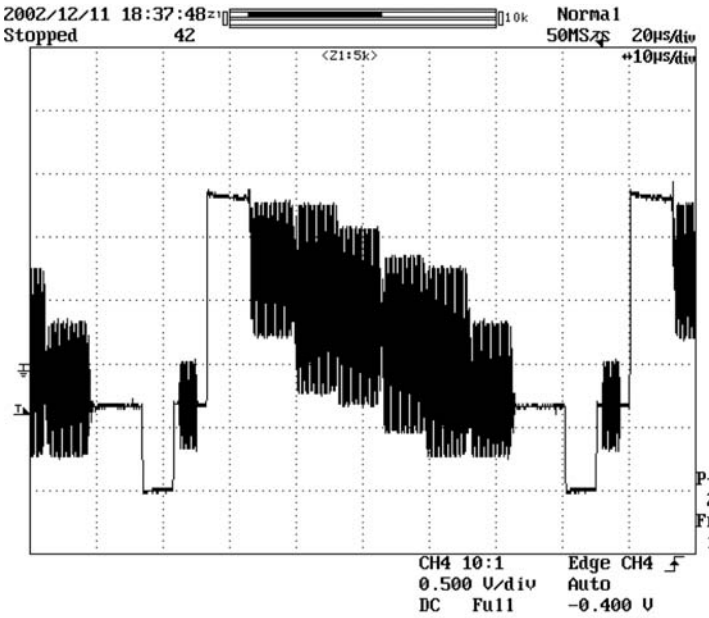


12. MT1379 AUDIO OPTICAL AND COAXIAL OUTPUT (ASPDIF)



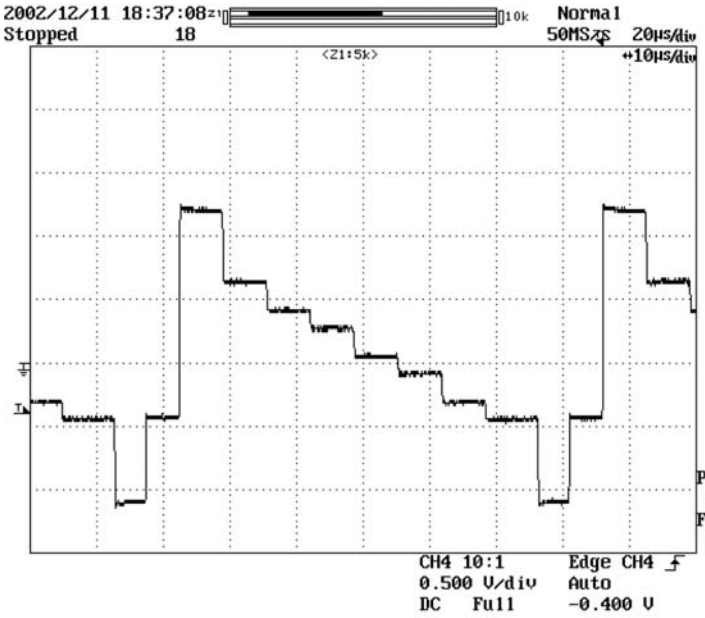
13. MT1379 VIDEO OUTPUT WAVEFORM
1) Full colorbar signal (CVBS)

DCLK = 93MHz, Vp-p=2.2, Vmax=2.7V



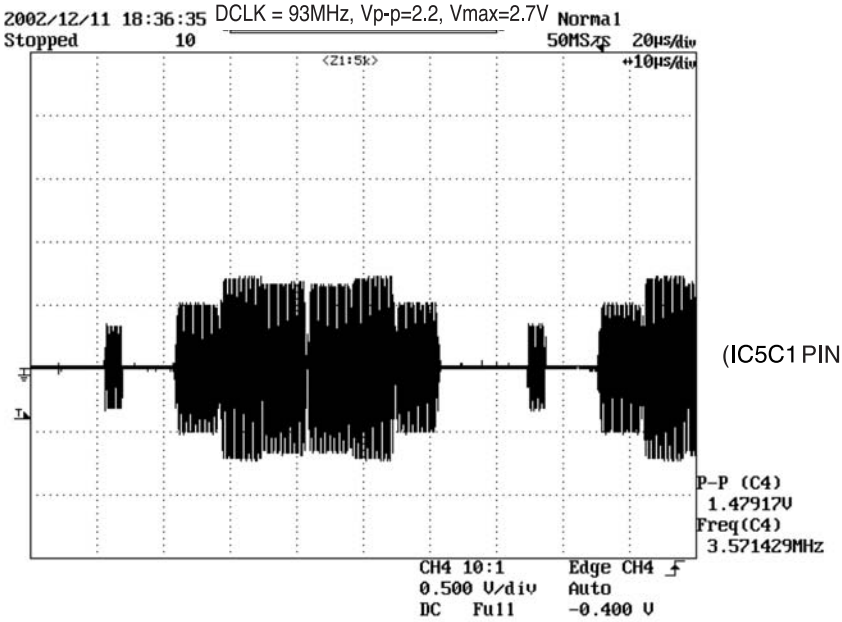
(IC5C1 PIN 23)

2) Y



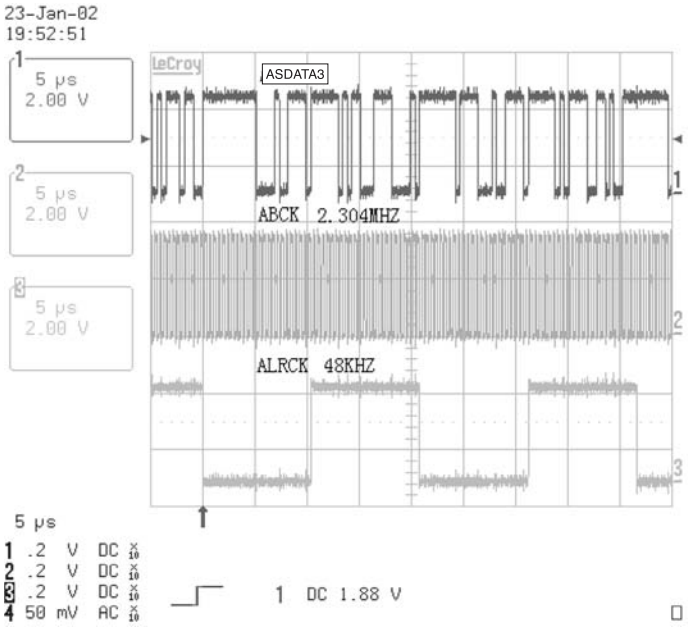
(IC5C1 PIN 21)

3) C



(IC5C1 PIN 26)

14. AUDIO OUTPUT FORM AUDIO DAC
1) Audio related Signal



ASDAT3(IC501 PIN 157)

ABCK(IC501 PIN 148)

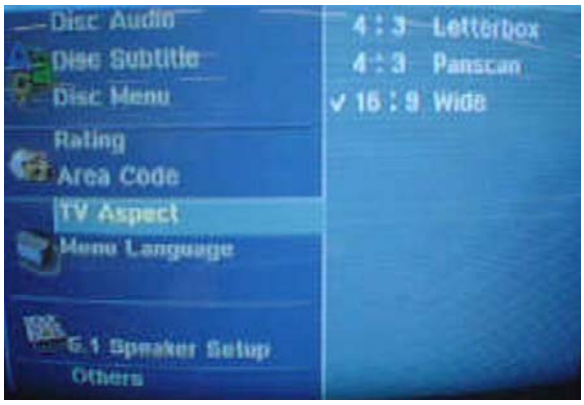
ALRCK(IC501 PIN 149)

SECTION 5
TEST MODE

DVD Processor Reset Procedure:

1. Press the [DVD SETUP] key on the remote commander to enter the set up screen. The following SET UP menu is displayed.

2. Move the cursor to [TV Aspect,16:9 Wide] on the screen.



3. Press the following keys in the order of [1] → [3] → [9] → [7] → [1] → [3] → [9] → [ENTER] on the remote commander.

4. The following menu is displayed and the DVD Processor is reset to the default set up when the product is shipped from the factory.

SYSTEM INFORMATION
MODEL : YWBD000021
REGION NO
CHIP ID MT1378 C
MAIN VER. : 0303
SUB VER. : 0002
SERVO VER. : C177
MICOM VER. : V0.8E2
PROM OPTION :55 03 00 FE 10 00 38 22
Factory Reset Done

5. Press any key on the remote commander to exit this mode. The DVD Processor reset procedure is completed.

SECTION 6
ELECTRICAL ADJUSTMENT

DVD SECTION

[TEST DISC LIST]

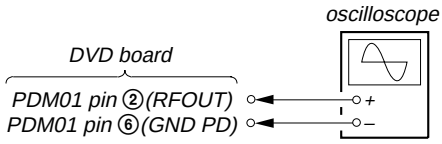
Use the following test disc on test mode.

TDV-520CSO (DVD-SL): PART No. J-2501-236-A
LUV-P01 (CD): PART No. 4-999-032-01
TDV-540C (DVD-DL): PART No. J-2501-235-A

Note: Do not use exiting test disc for DVD.

[RFMON Level Check]

Connection:

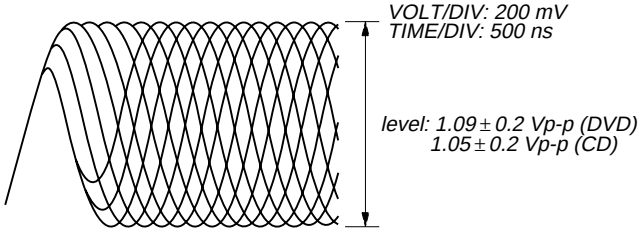


Procedure:

1. Connect an oscilloscope to PDM01 pin ② (RFOUT) and PDM01 pin ⑥ (GND PD) on the DVD board.
2. Turn the power on.
3. Set the test disc (DVD: TDV-520CSO, CD: LUV-P01) on the tray and touch the ▶ button to playback.
4. Confirm that oscilloscope waveform is clear and check RFOUT signal level is correct or not.

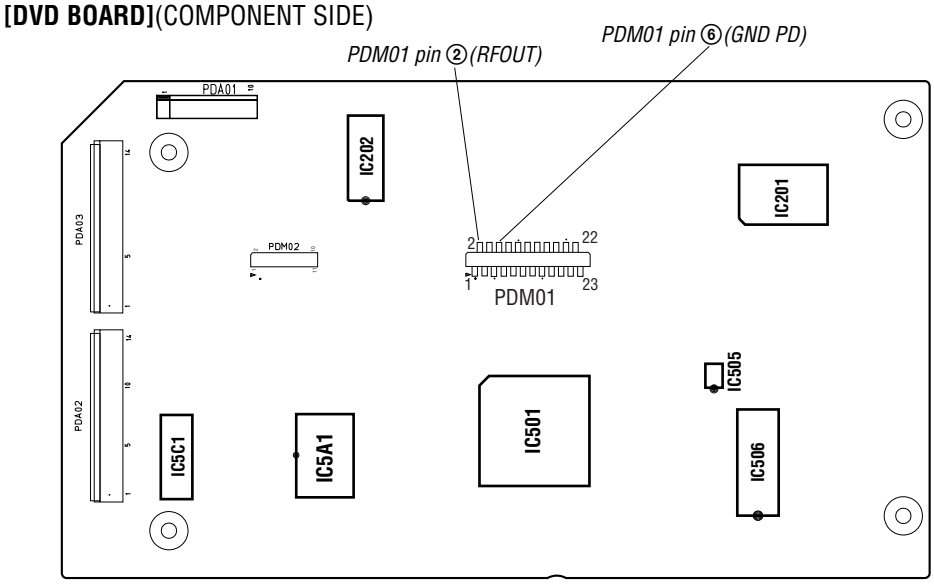
Note: A clear RFOUT signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RFOUT signal waveform



Checking Location: DVD board (COMPONENT SIDE)

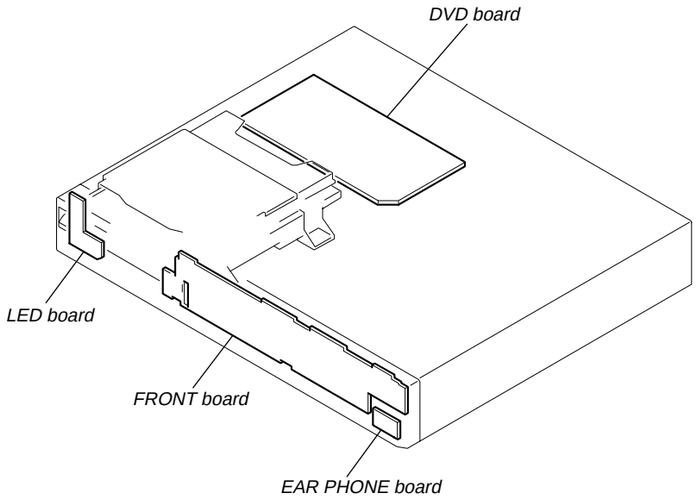
[DVD BOARD](COMPONENT SIDE)

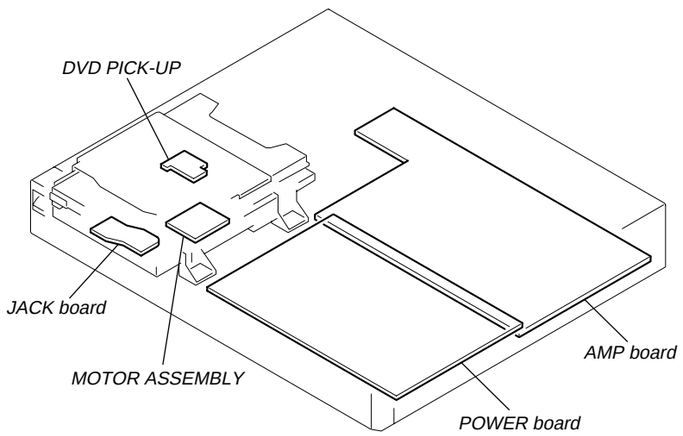


MEMO

SECTION 7
DIAGRAMS

- **Circuit Boards Location**





THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For Schematic Diagrams.
Note:
- All capacitors are in µF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

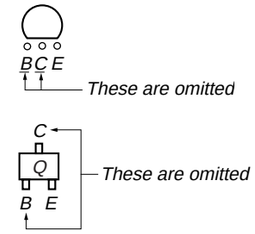
- ▬▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltages and waveforms are dc with respect to ground under no signal (detuned) conditions.
  no mark: DVD STOP
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : AUDIO
  - : CD PLAY
  - : DVD PLAY
  - : TUNER
  - : VIDEO
  - : Y
  - : CHROMA
  - : COMPONENT VIDEO
  - : R, G, B
- Abbreviation
  - AUS : Australian model
  - CND : Canadian model
  - EA : Saudi Arabia model
  - EE : East European model
  - RU : Russian model
  - SP : Singapore model

For Printed Wiring Boards.
Note:
- o——— : parts extracted from the component side.
- ○ : Through hole.
- ▬ : Pattern from the side which enables seeing.

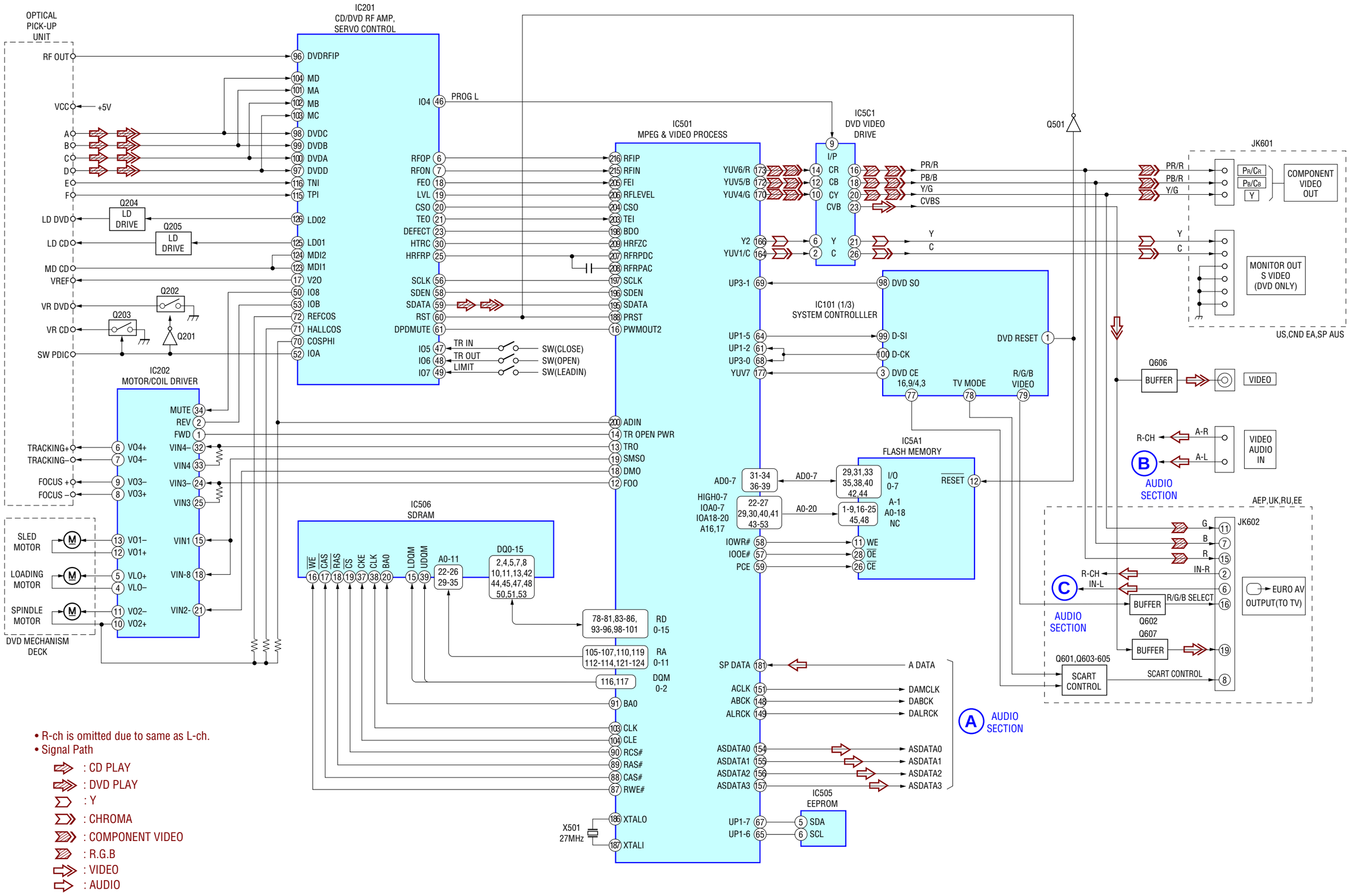
(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.

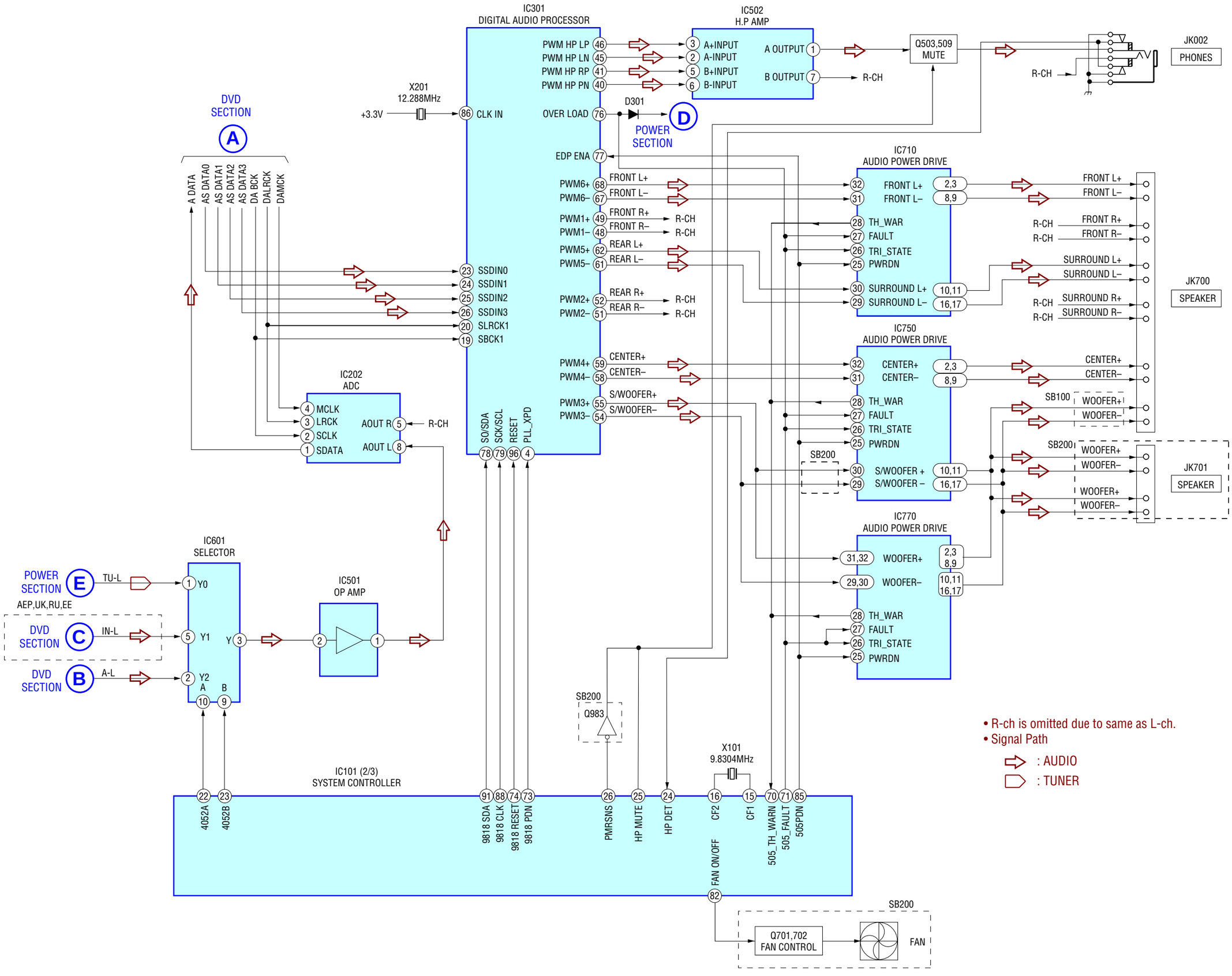


7-1. BLOCK DIAGRAM – DVD SECTION –



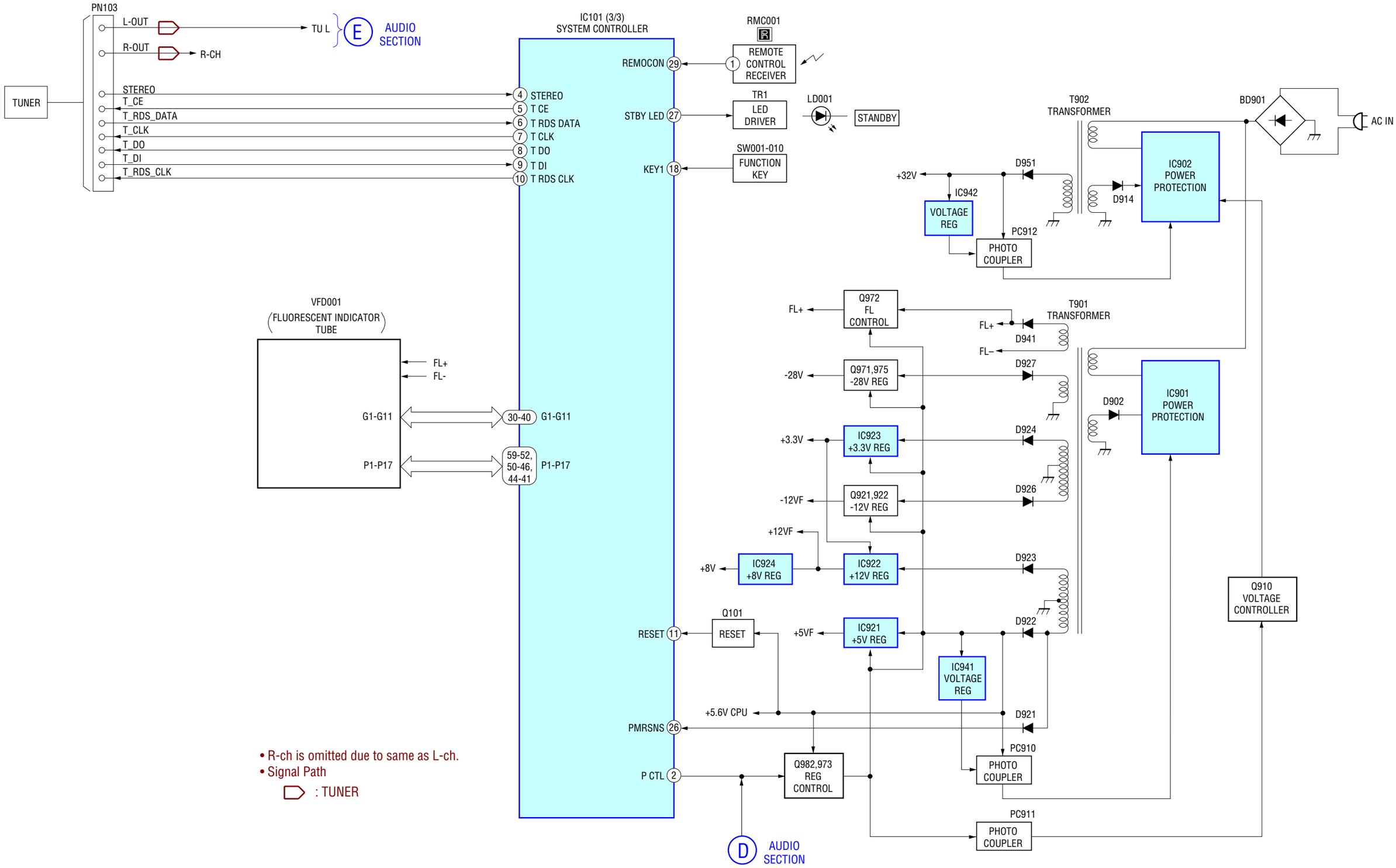
- R-ch is omitted due to same as L-ch.
- Signal Path
  - : CD PLAY
  - : DVD PLAY
  - : Y
  - : CHROMA
  - : COMPONENT VIDEO
  - : R.G.B
  - : VIDEO
  - : AUDIO

– AUDIO SECTION –



- R-ch is omitted due to same as L-ch.
- Signal Path
  - : AUDIO
  - : TUNER

– POWER SECTION –



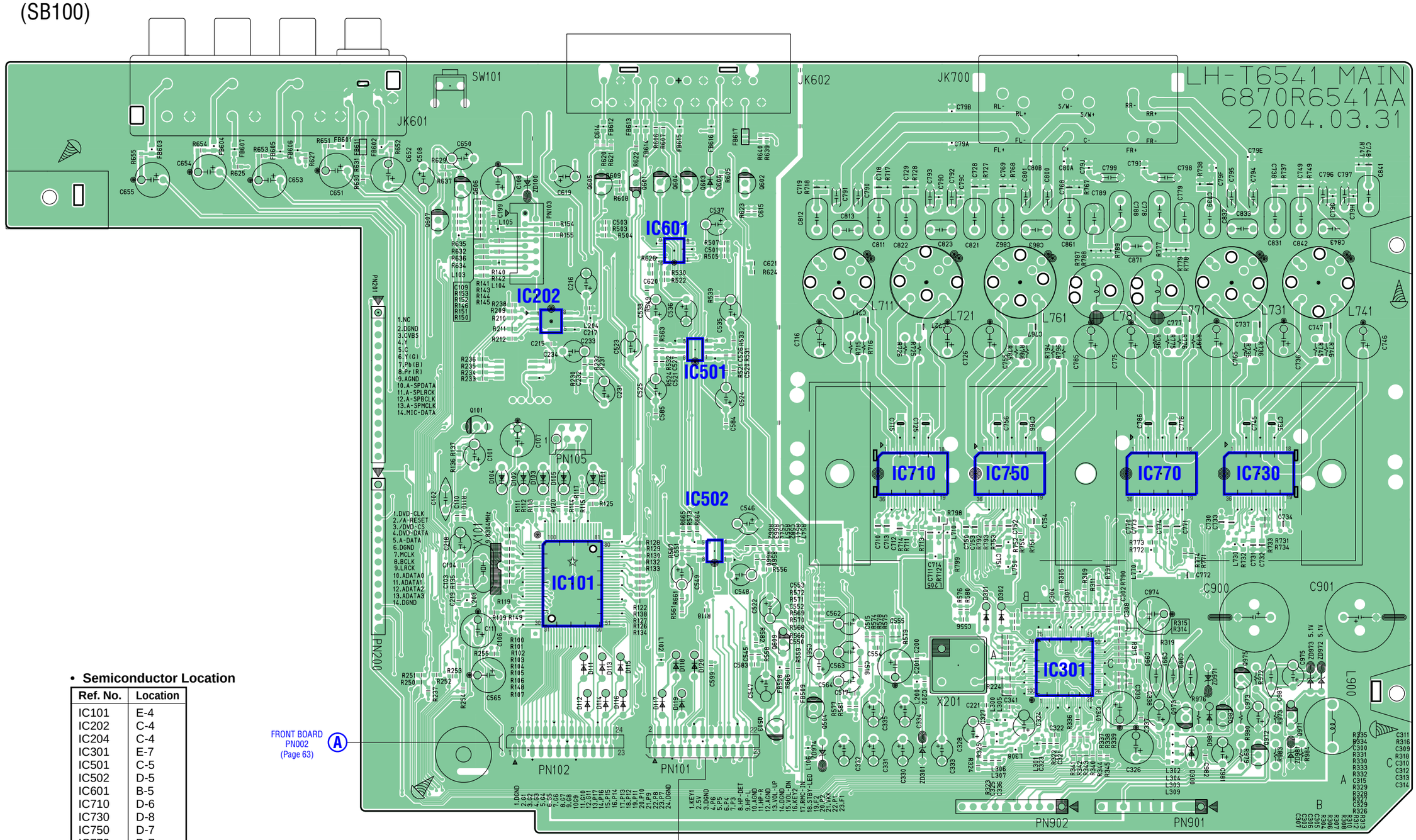
- R-ch is omitted due to same as L-ch.
- Signal Path
  : TUNER

7-2. PRINTED WIRING BOARD – AMP SECTION SB100 (COMPONENT SIDE) –

• See page 45 for Circuit Boards Location.

☆When IC101 (system controller) is exchanged, refer to Attention when IC101 (system controller) exchanged (page 5).

[AMP BOARD](COMPONENT SIDE)
(SB100)



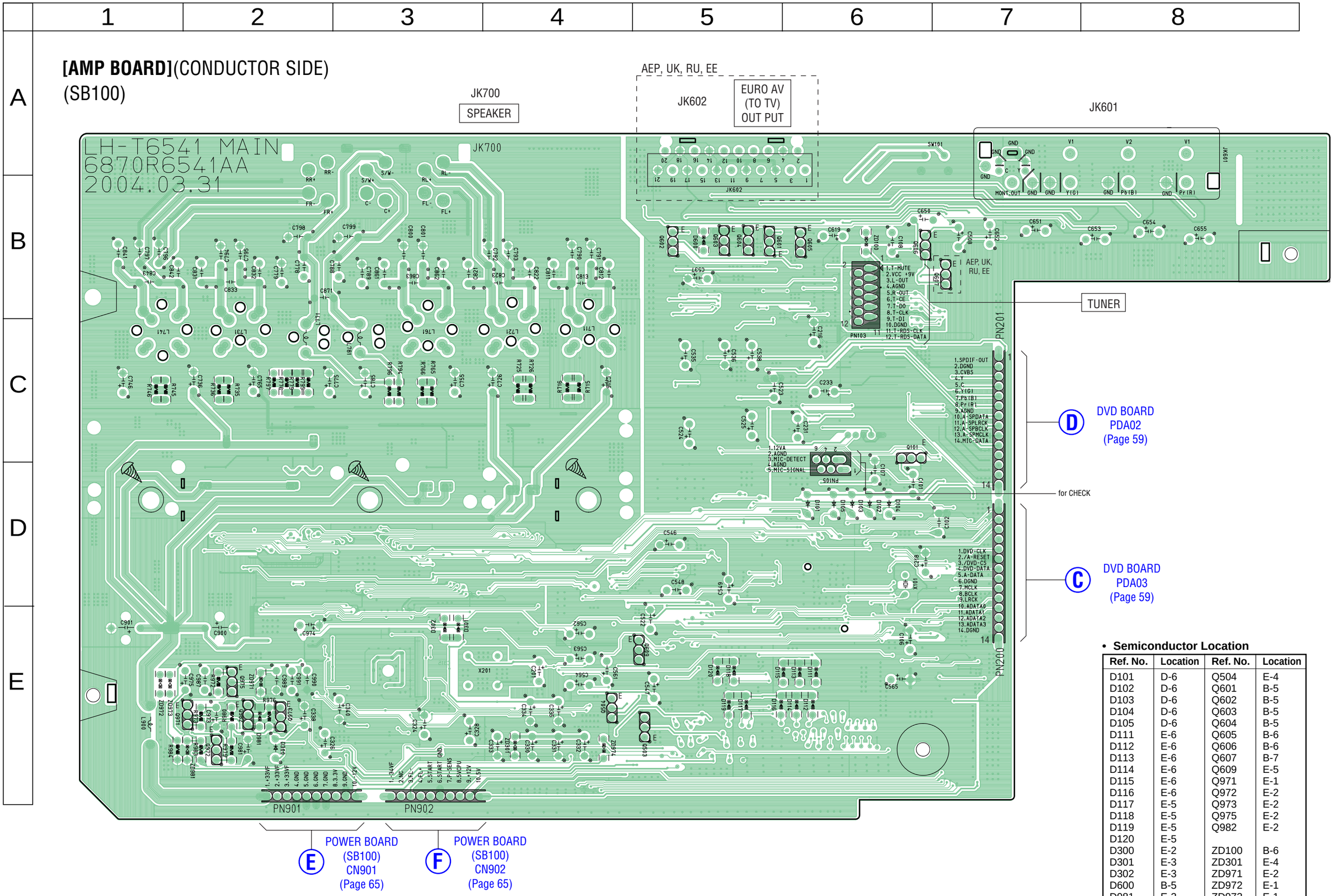
• **Semiconductor Location**

Ref. No.	Location
IC101	E-4
IC202	C-4
IC204	C-4
IC301	E-7
IC501	C-5
IC502	D-5
IC601	B-5
IC710	D-6
IC730	D-8
IC750	D-7
IC770	D-7

7-3. PRINTED WIRING BOARD – AMP SECTION SB100 (CONDUCTOR SIDE) –

• See page 45 for Circuit Boards Location.

[AMP BOARD](CONDUCTOR SIDE)
(SB100)



- **Semiconductor Location**

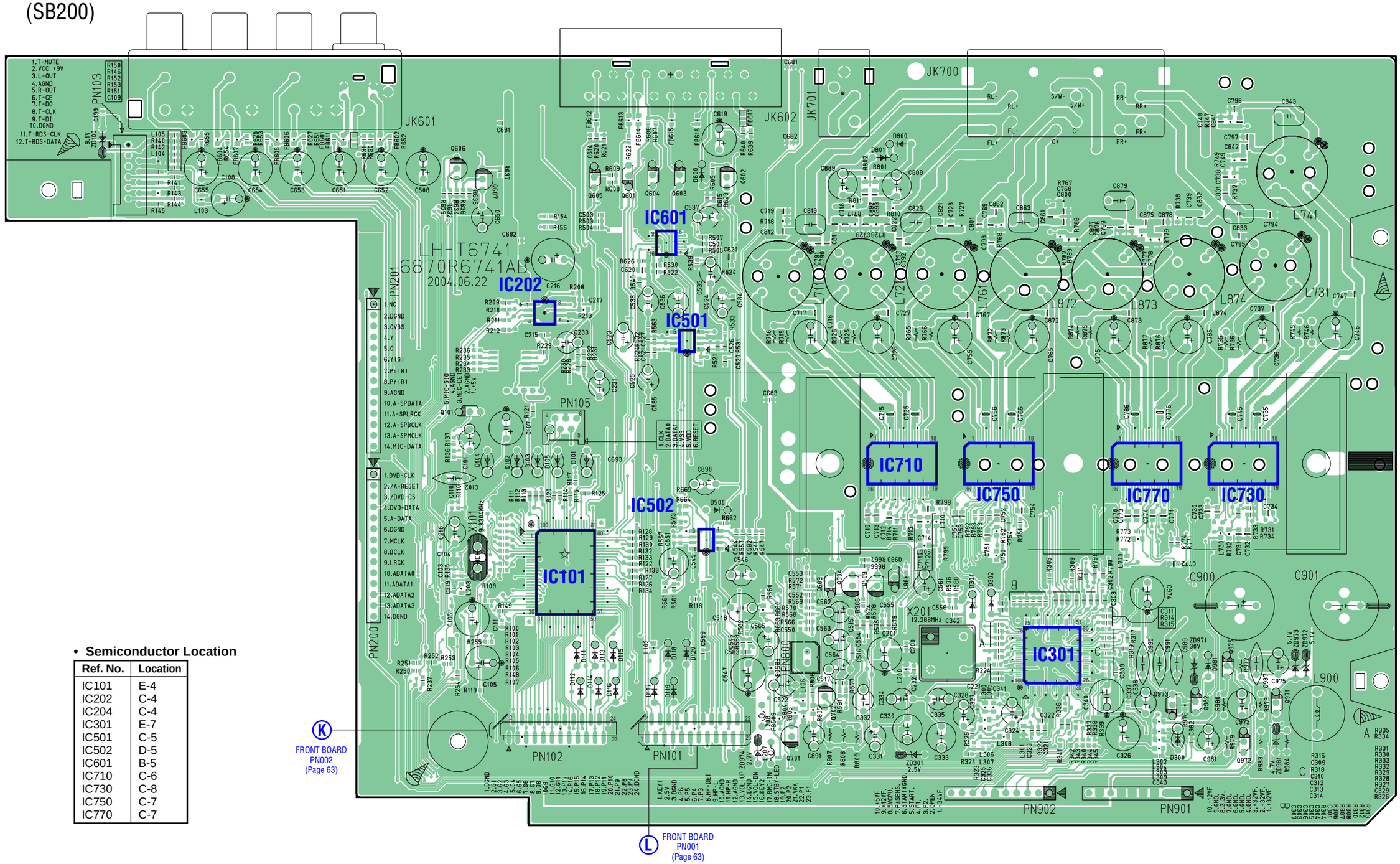
Ref. No.	Location	Ref. No.	Location
D101	D-6	Q504	E-4
D102	D-6	Q601	B-5
D103	D-6	Q602	B-5
D104	D-6	Q603	B-5
D105	D-6	Q604	B-5
D111	E-6	Q605	B-6
D112	E-6	Q606	B-6
D113	E-6	Q607	B-7
D114	E-6	Q609	E-5
D115	E-6	Q971	E-1
D116	E-6	Q972	E-2
D117	E-5	Q973	E-2
D118	E-5	Q975	E-2
D119	E-5	Q982	E-2
D120	E-5		
D300	E-2	ZD100	B-6
D301	E-3	ZD301	E-4
D302	E-3	ZD971	E-2
D600	B-5	ZD972	E-1
D981	E-2	ZD973	E-1
		ZD974	E-4
Q503	E-5	ZD981	E-2

7-4. PRINTED WIRING BOARD – AMP SECTION SB200 (COMPONENT SIDE) –

• See page 45 for Circuit Boards Location.

☆When IC101 (system controller) is exchanged, refer to Attention when IC101 (system controller) exchanged (page 5).

[AMP BOARD](COMPONENT SIDE)
(SB200)



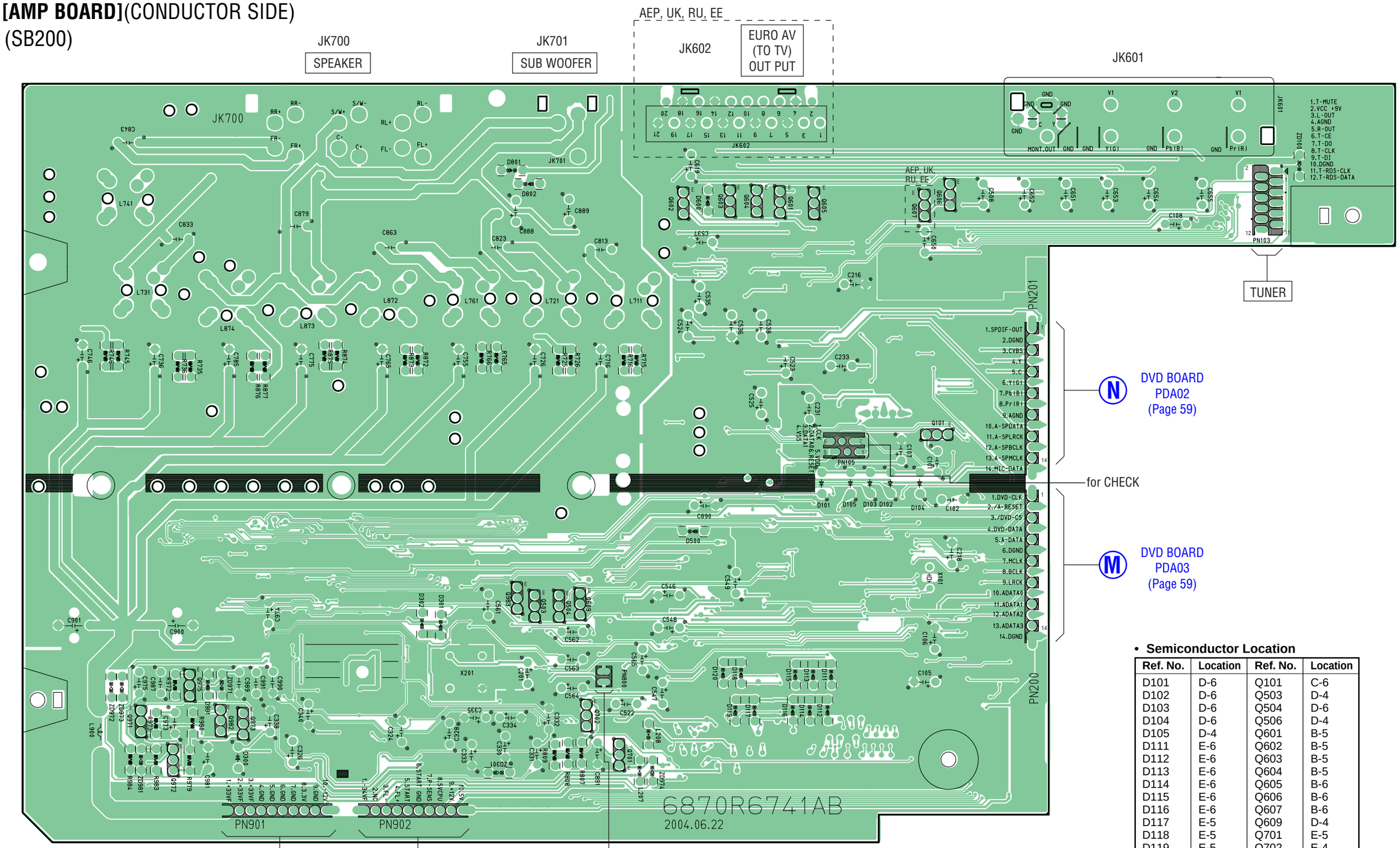
• **Semiconductor Location**

Ref. No.	Location
IC101	E-4
IC202	C-4
IC204	C-4
IC301	E-7
IC501	C-5
IC502	D-5
IC601	B-5
IC710	C-6
IC730	C-8
IC750	C-7
IC770	C-7

7-5. PRINTED WIRING BOARD – AMP SECTION SB200 (CONDUCTOR SIDE) – • **See page 45 for Circuit Boards Location.**

	1	2	3	4	5	6	7	8
A								
B								
C								
D								
E								

[AMP BOARD](CONDUCTOR SIDE)
(SB200)



Ⓝ DVD BOARD
PDA02
(Page 59)

for CHECK

Ⓜ DVD BOARD
PDA03
(Page 59)

Ⓗ POWER BOARD
(SB200)
CN901
(Page 66)

Ⓘ POWER BOARD
(SB200)
CN902
(Page 66)

FAN

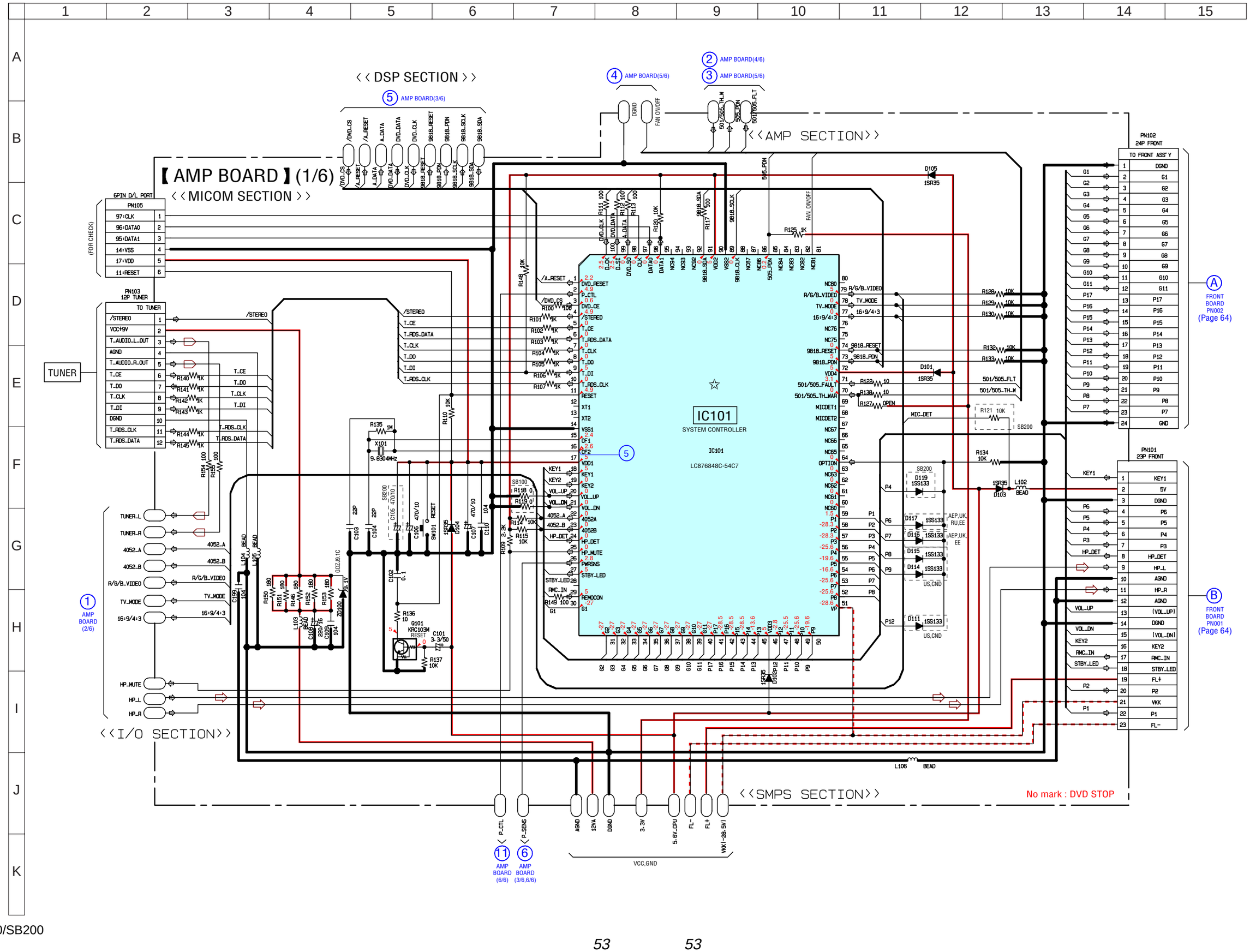
- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D101	D-6	Q101	C-6
D102	D-6	Q503	D-4
D103	D-6	Q504	D-6
D104	D-6	Q506	D-4
D105	D-4	Q601	B-5
D111	E-6	Q602	B-5
D112	E-6	Q603	B-5
D113	E-6	Q604	B-5
D114	E-6	Q605	B-6
D115	E-6	Q606	B-6
D116	E-6	Q607	B-6
D117	E-5	Q609	D-4
D118	E-5	Q701	E-5
D119	E-5	Q702	E-4
D120	E-5	Q971	E-2
D300	E-2	Q972	E-2
D301	D-3	Q973	E-2
D302	D-3	Q975	E-2
D500	D-5	Q982	E-2
D600	B-5	Q983	D-4
D801	B-4		
D802	B-4		

7-6. SCHEMATIC DIAGRAM – AMP SECTION (1/6) –

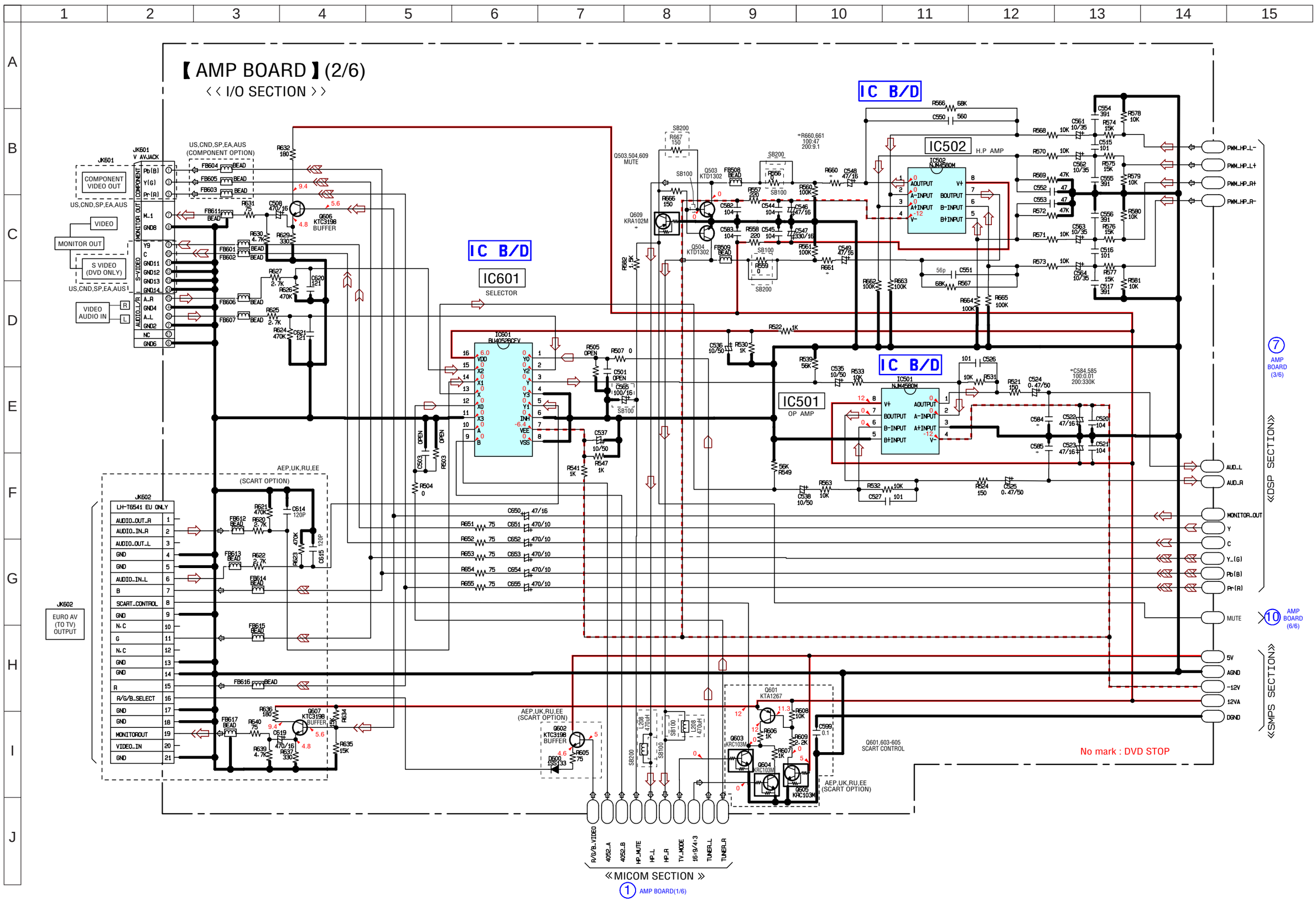
• See page 69 for Waveform.
• See page 73 for IC Pin Function Description.

☆When IC101 (system controller) is exchanged, refer to Attention when IC101 (system controller) exchanged (page 5).



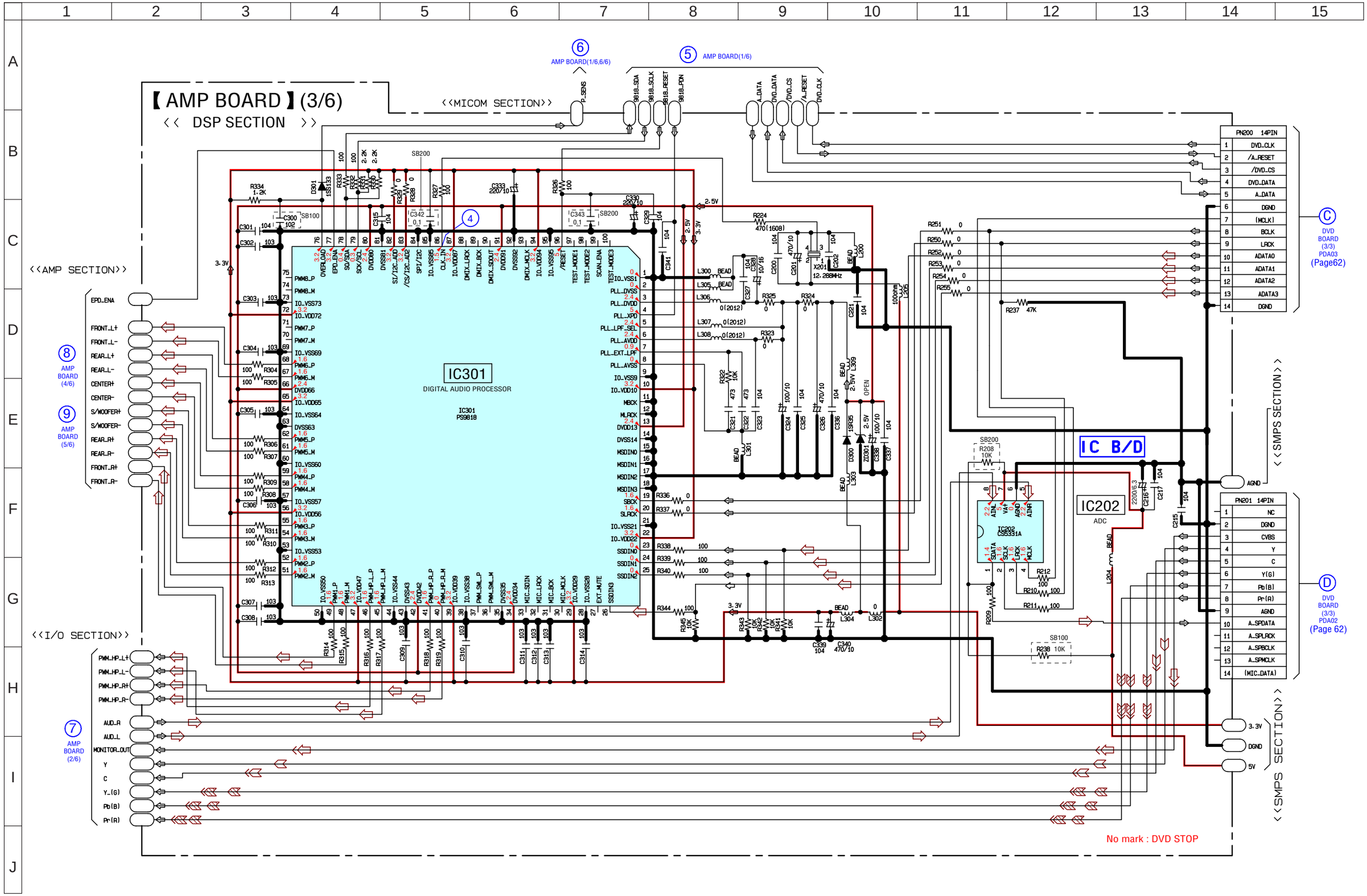
7-7. SCHEMATIC DIAGRAM – AMP SECTION (2/6) –

• See page 70 for IC Block Diagrams.

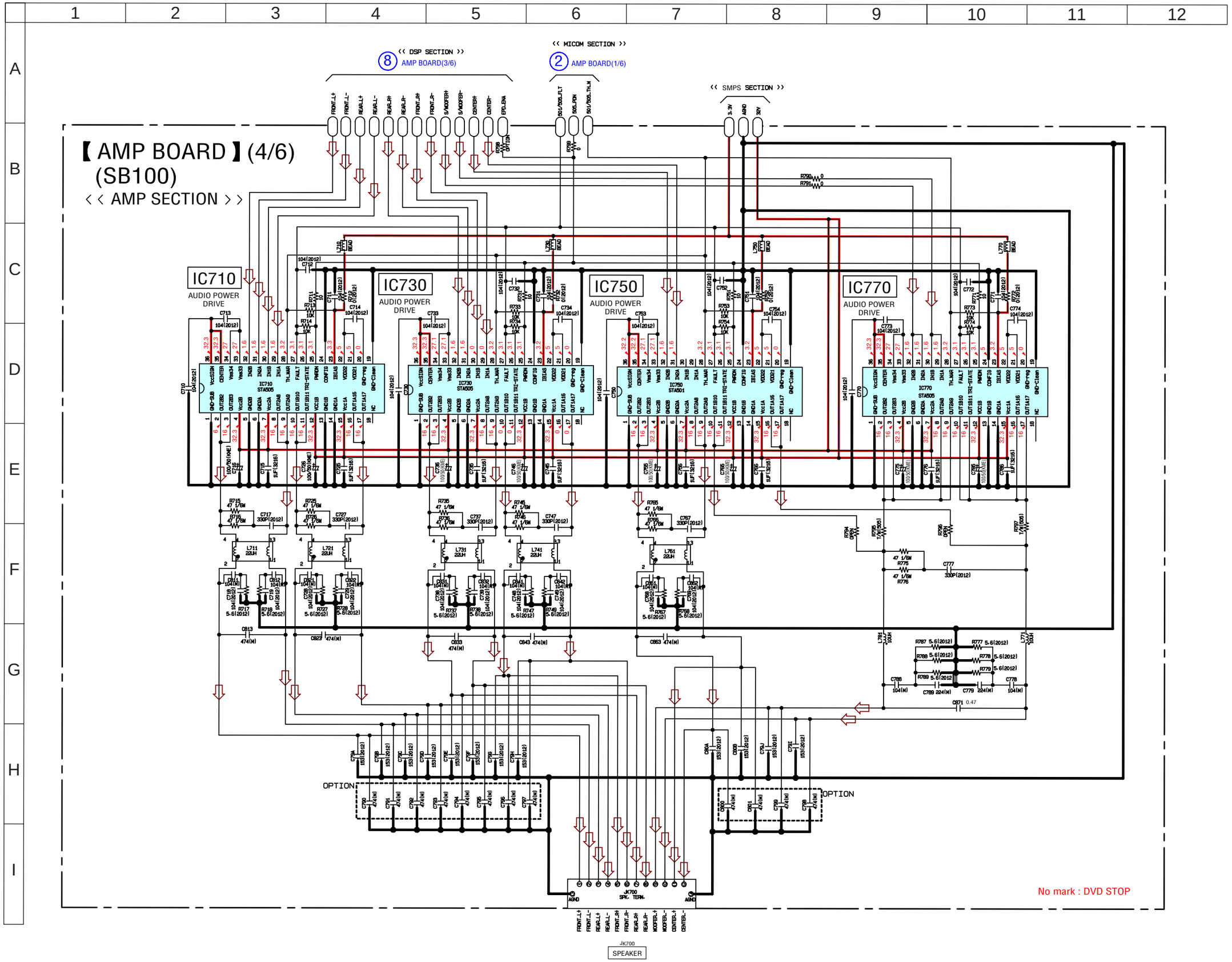


7-8. SCHEMATIC DIAGRAM – AMP SECTION (3/6) –

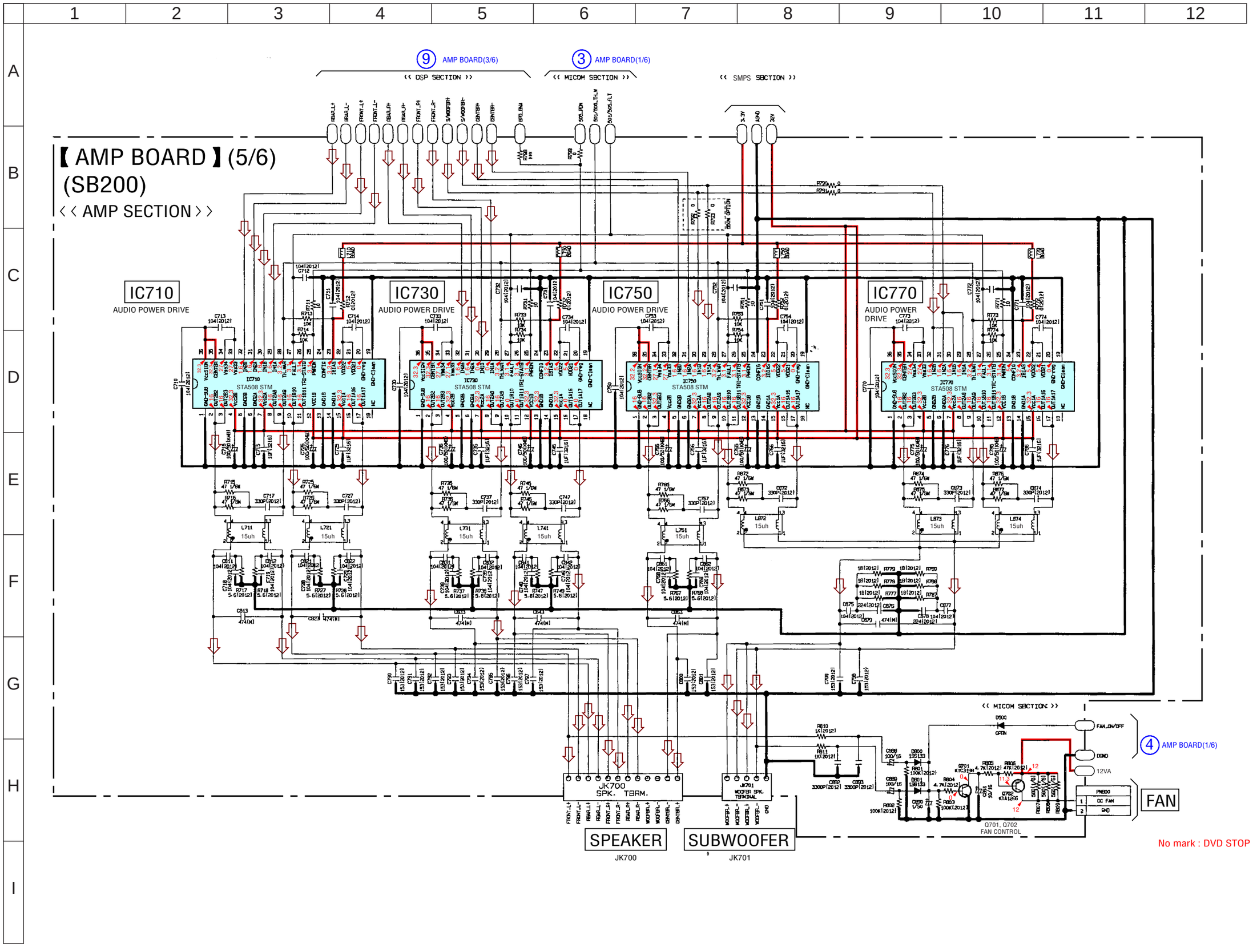
• See page 70 for IC Block Diagram. • See page 69 for Waveform. • See page 75 for IC Pin Function Description.



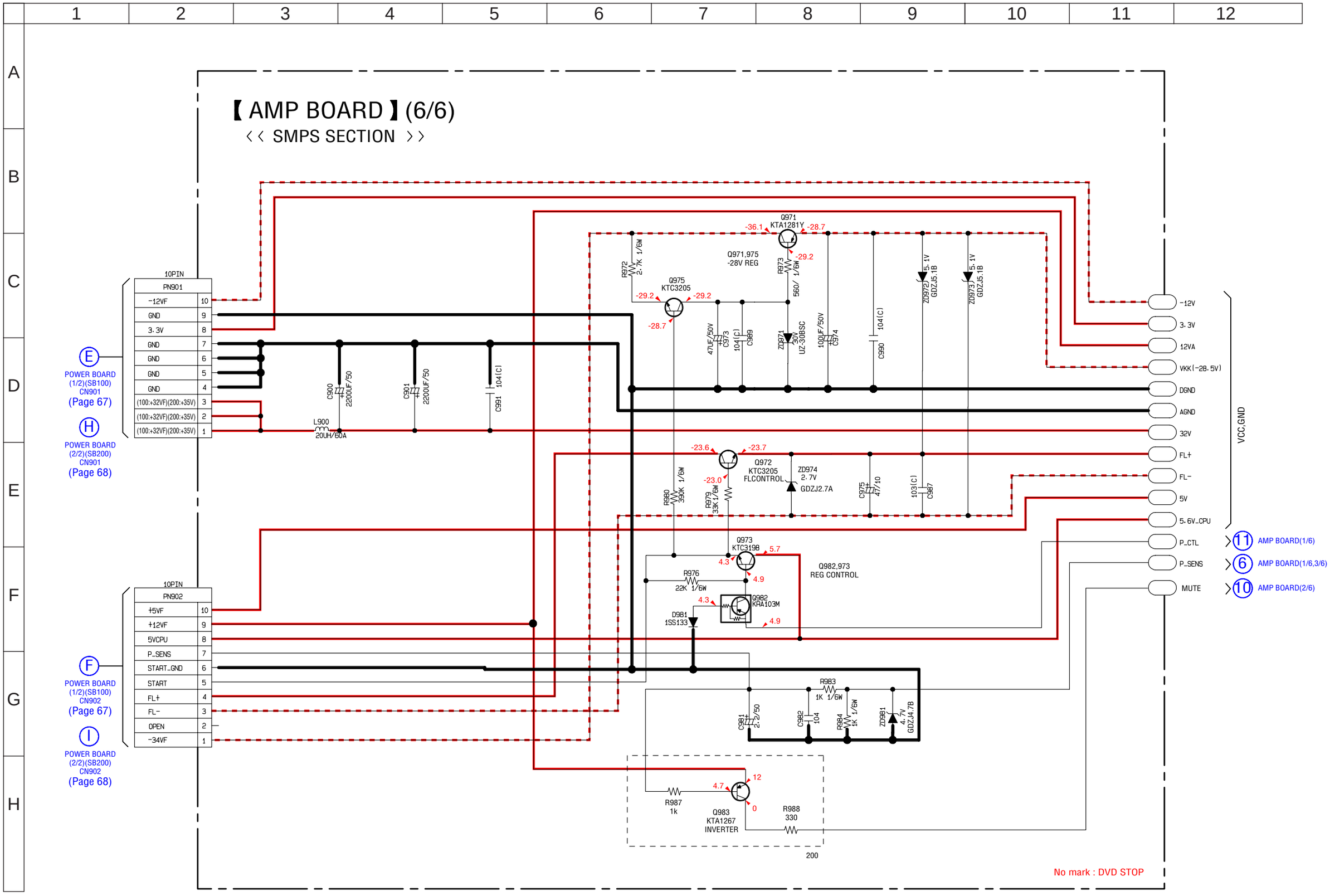
7-9. SCHEMATIC DIAGRAM – AMP SECTION (4/6) (SB100) –



7-10. SCHEMATIC DIAGRAM – AMP SECTION (5/6) (SB200) –

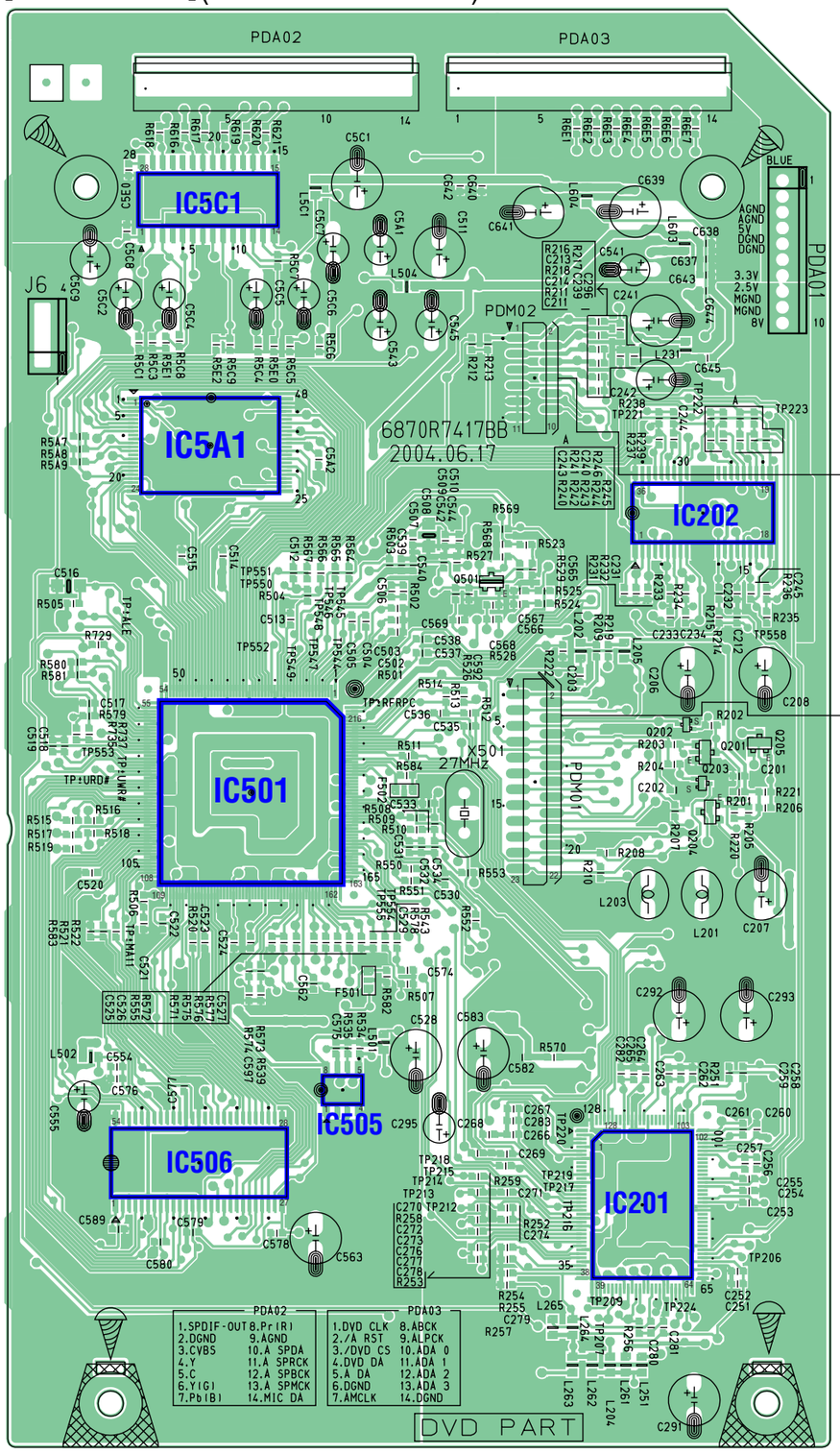


7-11. SCHEMATIC DIAGRAM – AMP SECTION (6/6) –



7-12. PRINTED WIRING BOARD – DVD SECTION – • **See page 45 for Circuit Boards Location.**

[DVD BOARD](COMPONENT SIDE)



AMP BOARD (SB100) PN200 (Page 50) — C

AMP BOARD (SB200) PN200 (Page 52) — M

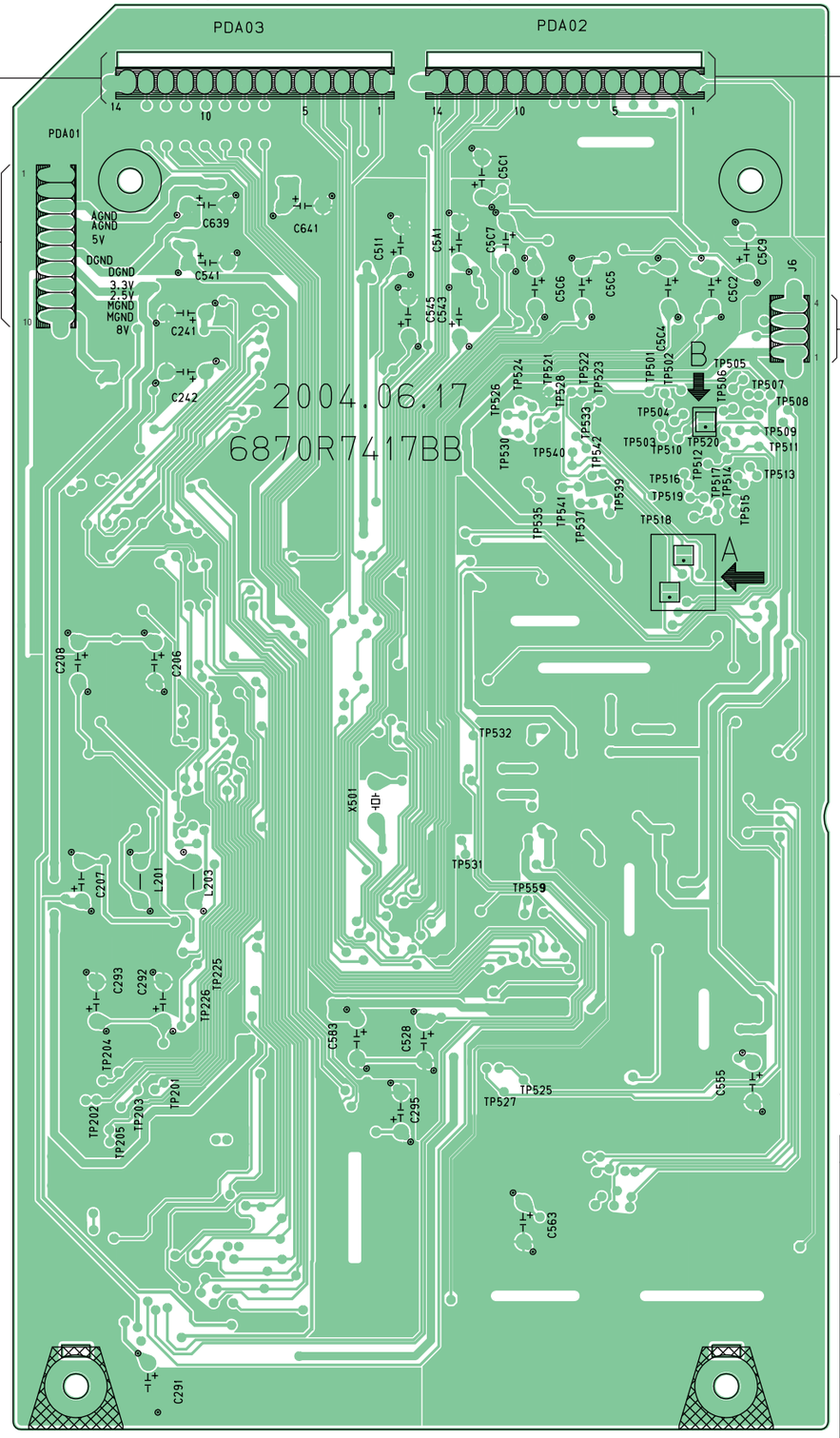
POWER BOARD (SB100) CN903 (Page 65) — G

POWER BOARD (SB200) CN903 (Page 66) — J

DVD MECHANISM DECK

OPTICAL PICK-UP BLOCK

[DVD BOARD](CONDUCTOR SIDE)



AMP BOARD (SB100) PN201 (Page 50) — D

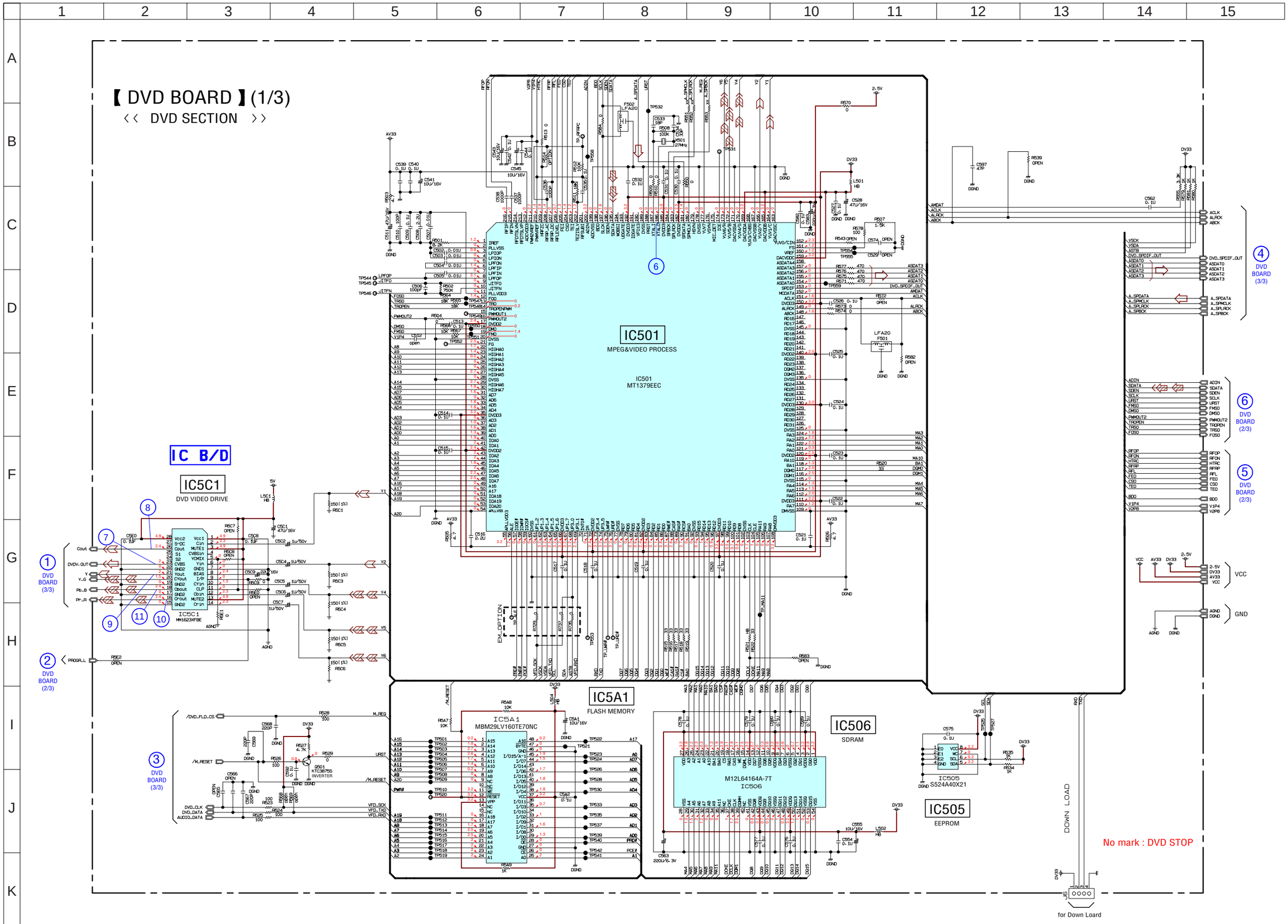
AMP BOARD (SB200) PN201 (Page 52) — N

for Down Loard

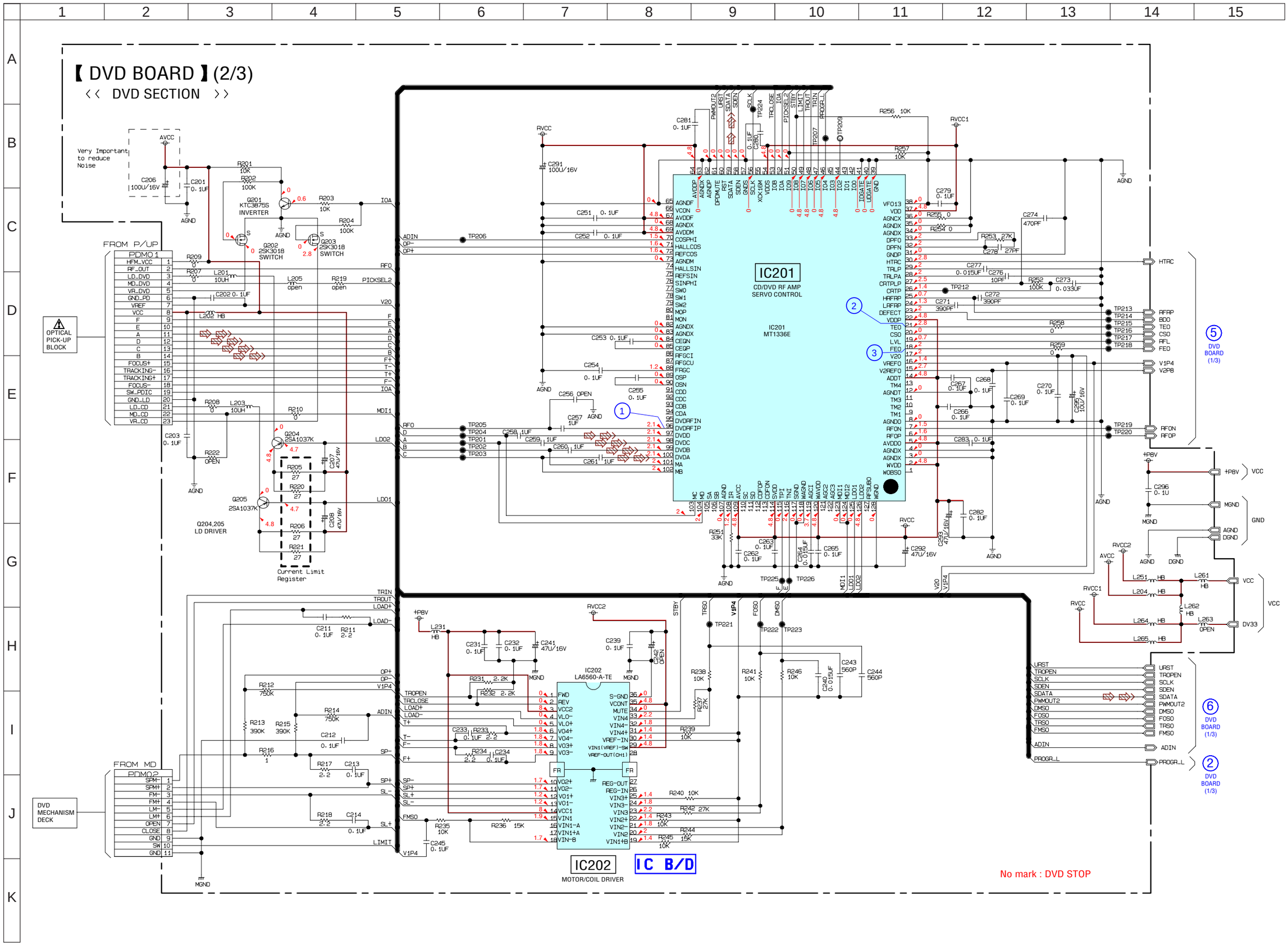
- **Semiconductor Location**

Ref. No.	Location
IC201	E-3
IC202	C-4
IC501	C-2
IC505	E-2
IC506	E-2
IC5A1	B-2
IC5C1	B-2
Q201	D-4
Q202	D-4
Q203	D-4
Q204	D-4
Q205	D-4
Q501	C-3

7-13. SCHEMATIC DIAGRAM – DVD SECTION (1/3) – • See page 72 for IC Block Diagram. • See page 69 for Waveforms.



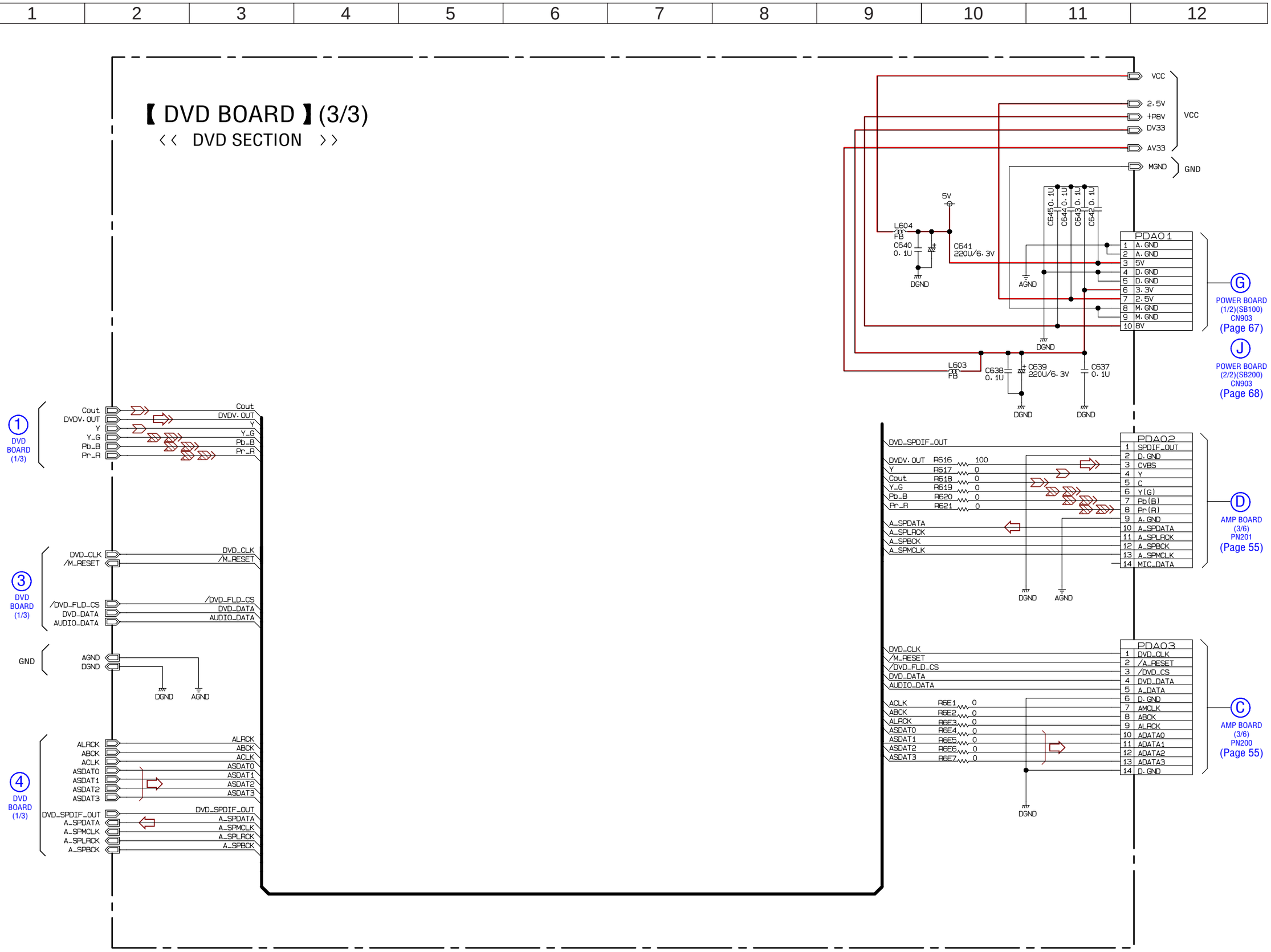
7-14. SCHEMATIC DIAGRAM – DVD SECTION (2/3) – • See page 71 for IC Block Diagram. • See page 69 for Waveforms.



7-15. SCHEMATIC DIAGRAM – DVD SECTION (3/3) –

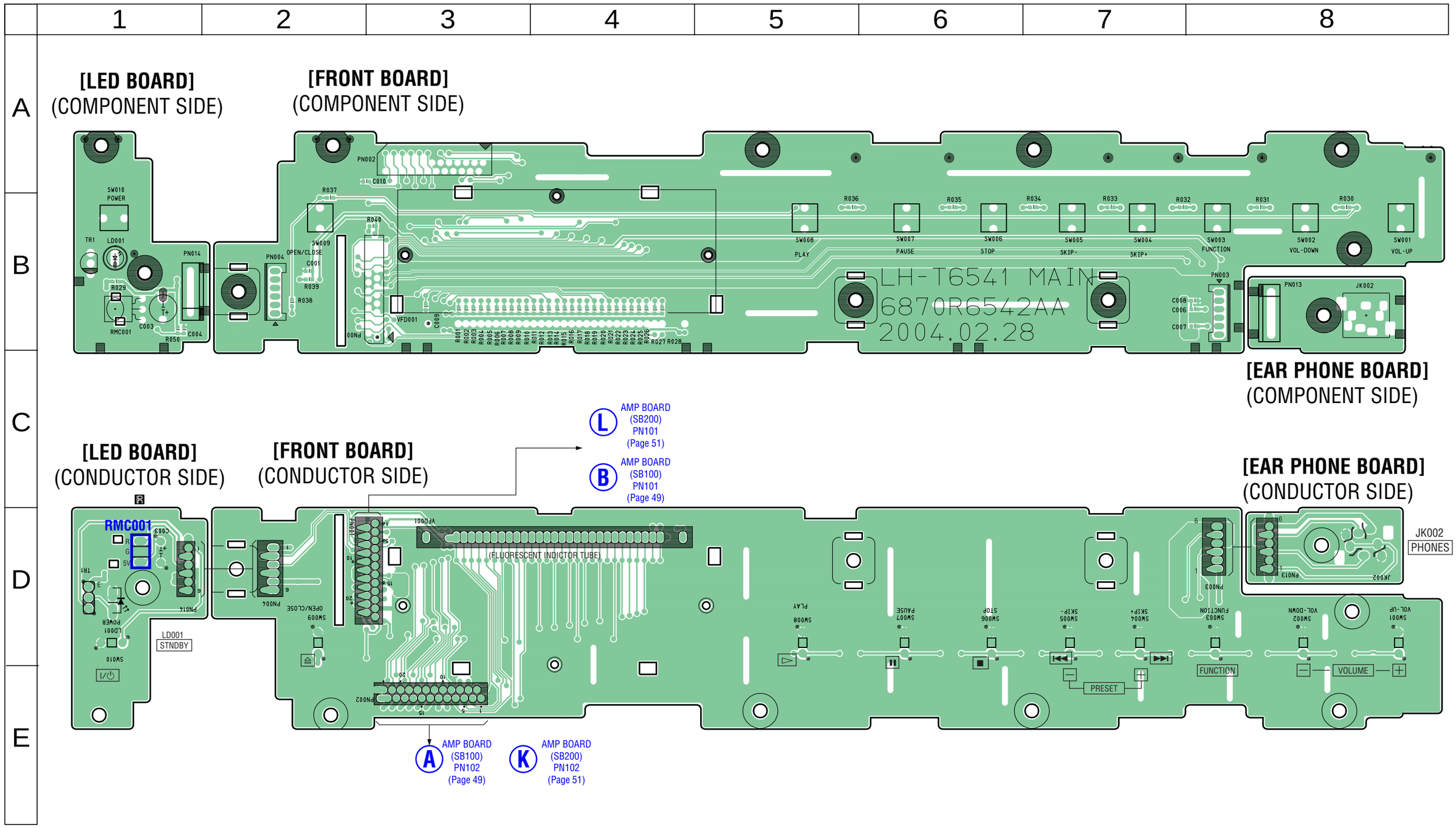
【 DVD BOARD 】(3/3)

〈〈 DVD SECTION 〉〉



7-16. PRINTED WIRING BOARD – FRONT SECTION –

• See page 45 for Circuit Boards Location.



7-17. SCHEMATIC DIAGRAM – FRONT SECTION –

【FRONT BOARD】

VFD001
FL_DISPLAY
(FLUORESCENT INDICATOR TUBE)

【 LED BOARD 】 RMC001

REMOTE CONTROL RECEIVER

24PIN PN002

DGND	1
G1	2
G2	3
G3	4
G4	5
G5	6
G6	7
G7	8
G8	9
G9	10
G10	11
G11	12
P17	13
P16	14
P15	15
P14	16
P13	17
P12	18
P11	19
P10	20
P9	21
P8	22
P7	23
DGND	24

A AMP BOARD (1/6) PN102 (Page 53)

6PIN PN004

1	KEY1(POWER)
2	STBY_LED
3	RMC_IN
4	GND
5	5V
6	GND

6PIN PN014

KEY1(POWER)	1
STBY_LED	2
RMC_IN	3
GND	4
5V	5
GND	6

23PIN PN001

KEY1	23
5V	22
DGND	21
P6	20
P5	19
P4	18
P3	17
HP_DET	16
HP_L	15
AGND	14
HP_R	13
AGND	12
VOL_UP	11
DGND	10
VOL_DN	9
KEY2	8
RMC_IN	7
STBY_LED	6
FL+	5
P2	4
VKK	3
P1	2
FL-	1

B AMP BOARD (1/6) PN101 (Page 53)

6PIN PN003

1	HP_DET
2	DGND
3	HP_L
4	AGND
5	HP_R
6	AGND

【EAR PHONE BOARD】

6PIN PN013

HP_DET	1
DGND	2
HP_L	3
AGND	4
HP_R	5
AGND	6

JK002 HEAD PHONE

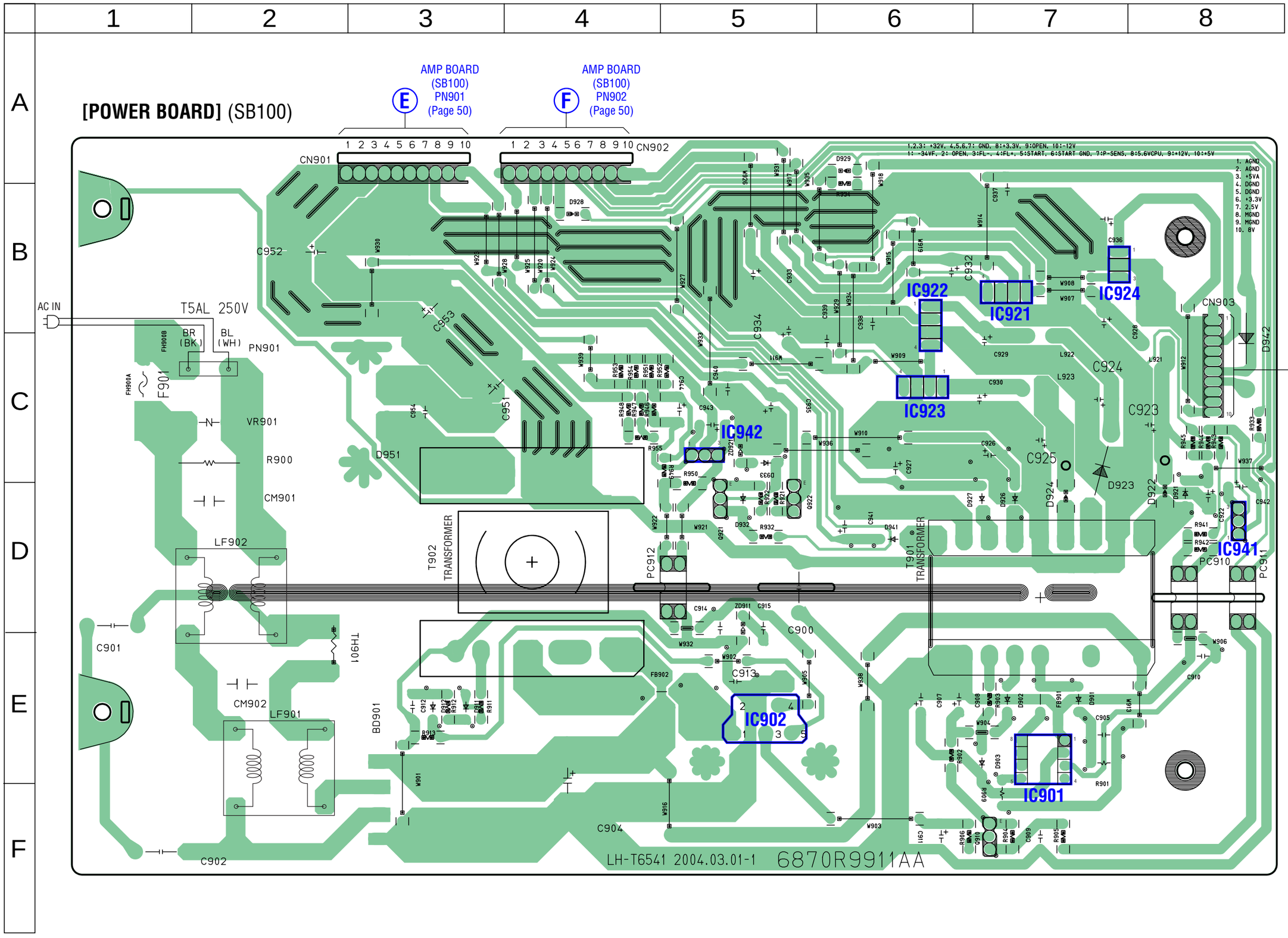
PHONES

No mark : DVD STOP

7-18. PRINTED WIRING BOARD – POWER SECTION (SB100) –

• See page 45 for Circuit Boards Location.

[POWER BOARD] (SB100)

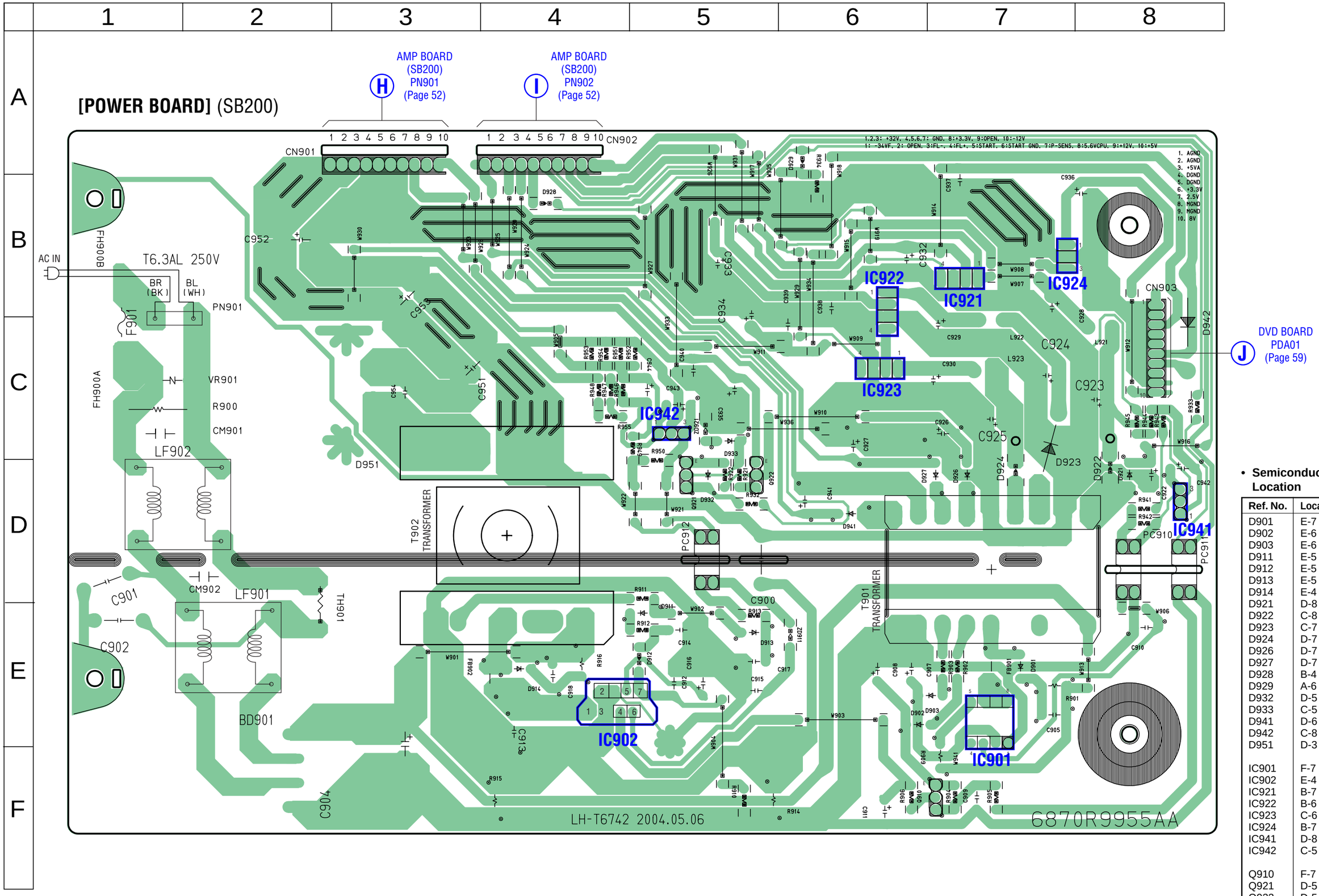


- **Semiconductor Location**

Ref. No.	Location
D901	E-7
D902	E-7
D903	E-7
D911	E-3
D912	E-3
D921	C-8
D922	C-8
D923	C-7
D924	D-7
D926	D-7
D927	D-7
D928	B-4
D929	A-6
D932	D-5
D933	C-5
D941	D-6
IC901	E-7
IC902	E-6
IC921	B-7
IC922	B-6
IC923	C-6
IC924	B-7
IC941	D-8
IC942	C-5
Q910	F-7
Q921	D-5
Q922	D-5
ZD911	E-5
ZD921	C-5

7-19. PRINTED WIRING BOARD – POWER SECTION (SB200) –

• See page 45 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D901	E-7
D902	E-6
D903	E-6
D911	E-5
D912	E-5
D913	E-5
D914	E-4
D921	D-8
D922	C-8
D923	C-7
D924	D-7
D926	D-7
D927	D-7
D928	B-4
D929	A-6
D932	D-5
D933	C-5
D941	D-6
D942	C-8
D951	D-3
IC901	F-7
IC902	E-4
IC921	B-7
IC922	B-6
IC923	C-6
IC924	B-7
IC941	D-8
IC942	C-5
Q910	F-7
Q921	D-5
Q922	D-5
ZD911	E-6
ZD921	C-5

7-20. SCHEMATIC DIAGRAM – POWER SECTION (1/2) (SB100) –

【 POWER BOARD 】(1/2) (SB100)

T901 TRANSFORMER

IC901 POWER PROTECTION

IC921 +5V REG

IC922 +12V REG

IC924 +8V REG

IC923 +3.3V REG

Q921,922 -12V REG

IC941 VOLTAGE REG

IC902 POWER PROTECTION

IC942 VOLTAGE REG

T902 TRANSFORMER

AC IN

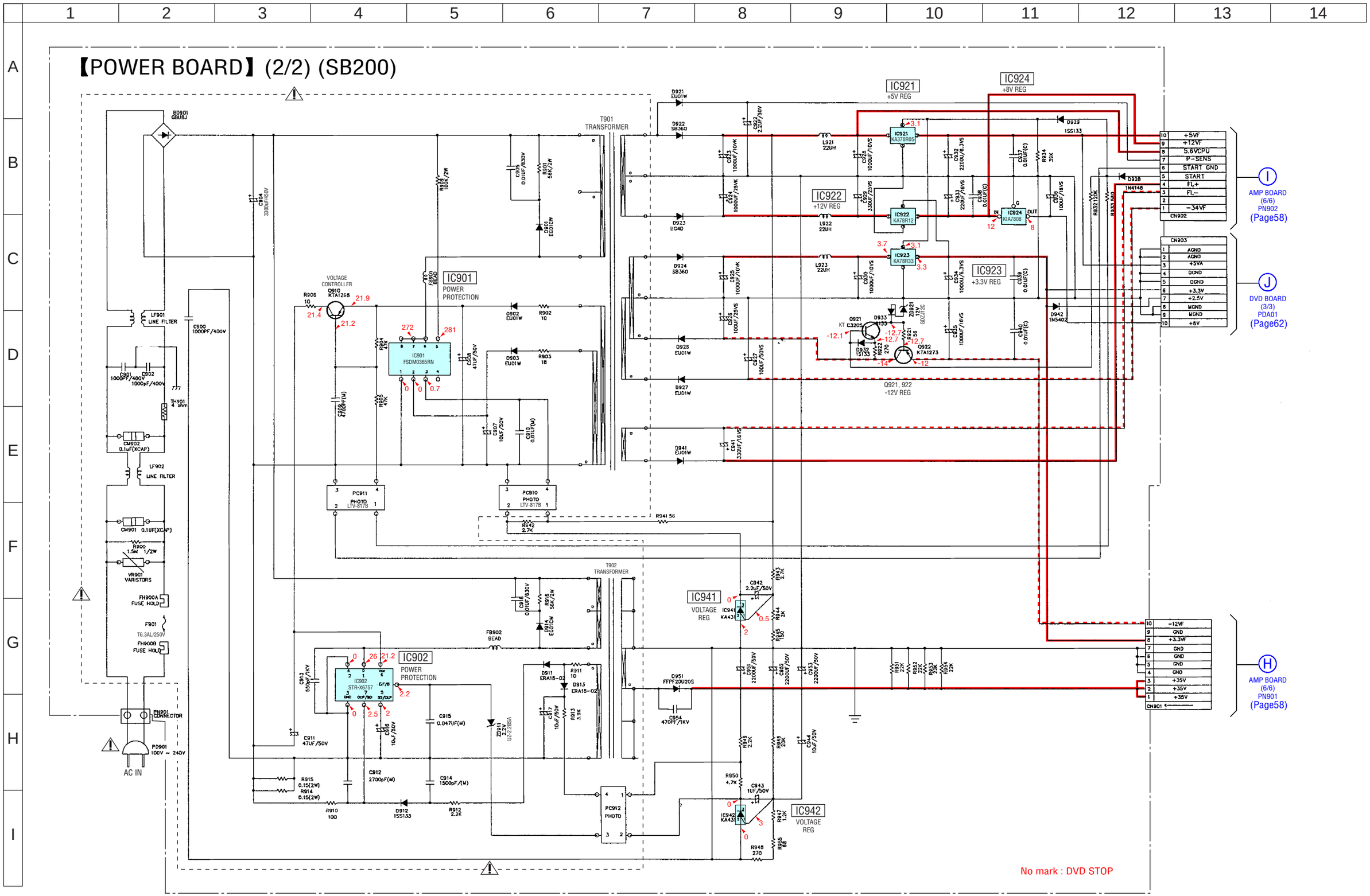
CN902: 10 +5VF, 9 +12VF, 8 5.6VCPU, 7 P-SENS, 6 START GND, 5 START, 4 FL+, 3 FL-, 2, 1 -34VF → F AMP BOARD (6/6) PN902 (Page 58)

CN903: 1 AGND, 2 AGND, 3 +5VA, 4 DGND, 5 DGND, 6 +3.3V, 7 +2.5V, 8 MGND, 9 MGND, 10 +8V → G DVD BOARD (3/3) PDA01 (Page 62)

CN901: 10 -12VF, 9 GND, 8 +3.3VF, 7 GND, 6 GND, 5 GND, 4 GND, 3 +32V, 2 +32V, 1 +32V → E AMP BOARD (6/6) PN901 (Page 58)

No mark : DVD STOP

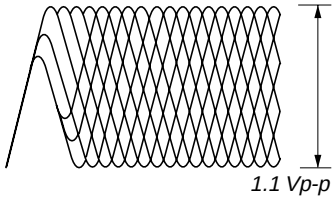
7-21. SCHEMATIC DIAGRAM – POWER SECTION (2/2) (SB200) –



• **Waveforms**

– DVD Board –

① IC201 ㊾ (DVD RFIP)



200 mV/DIV, 100 ns/DIV

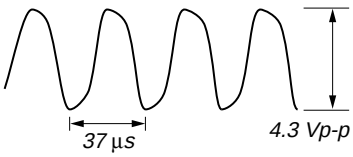
② IC201 ㉑ (TEO) (CD mode)

500 mV/DIV, 1 ms/DIV

③ IC201 ⑱ (FEO)

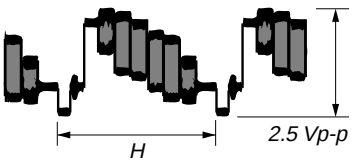
100 mV/DIV, 1 ms/DIV

⑥ IC501 ⑱⑥ (XTALO)



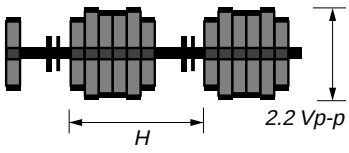
1 V/DIV, 20 µs/DIV

⑦ IC5C1 ㉓ (CVBS)



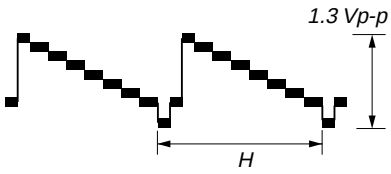
500 mV/DIV, 20 µs/DIV

⑧ IC5C1 ㉖ (C out)



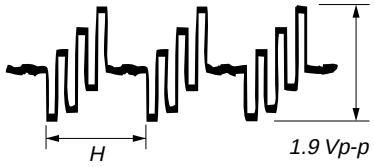
500 mV/DIV, 20 µs/DIV

⑨ IC5C1 ㉑ (Y out)



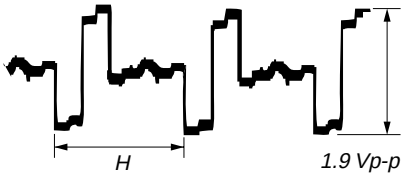
500 mV/DIV, 20 µs/DIV

⑩ IC5C1 ⑯ (Cr out)



500 mV/DIV, 20 µs/DIV

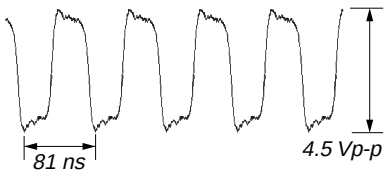
⑪ IC5C1 ⑱ (Cb out)



500 mV/DIV, 20 µs/DIV

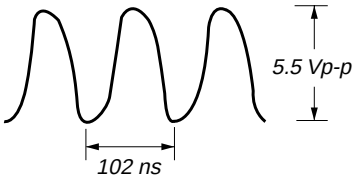
– AMP Board –

④ IC301 ㊻ (CLK_IN)



1 V/DIV, 40 ns/DIV

⑤ IC101 ⑯ (CF2)

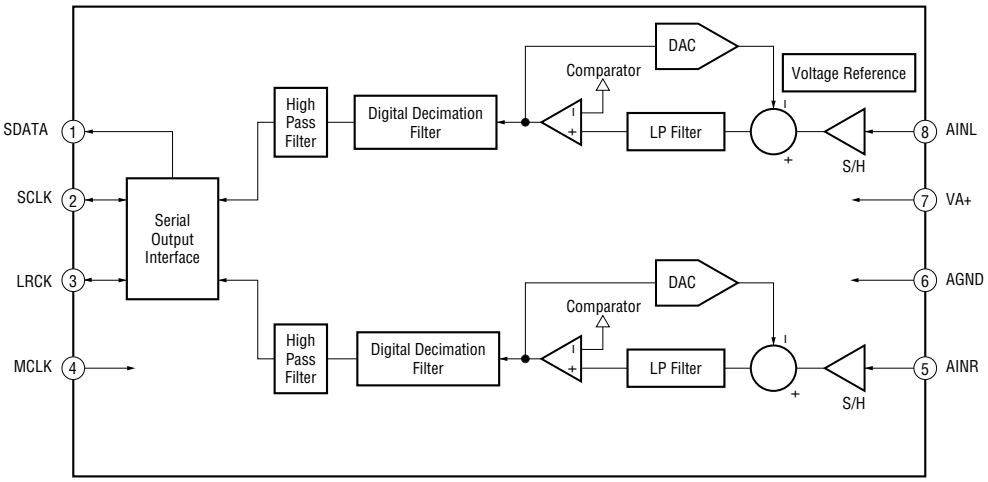


2 V/DIV, 40 ns/DIV

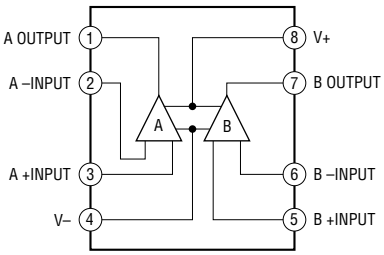
- **IC Block Diagrams**

– AMP Board –

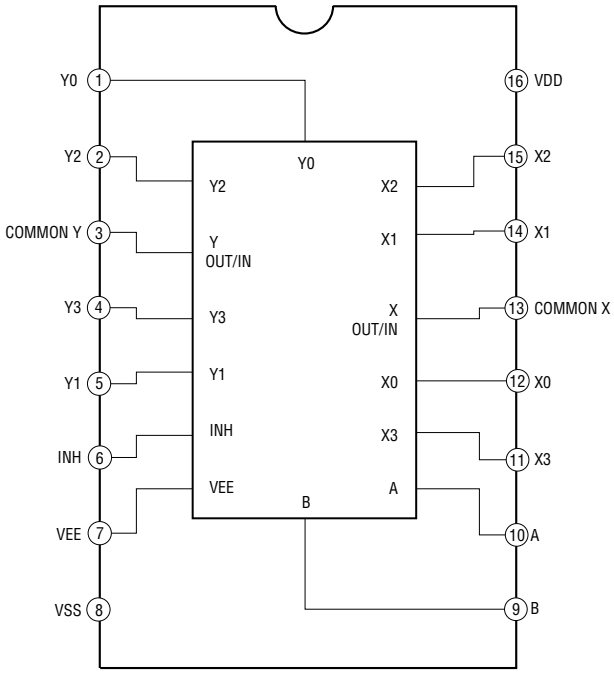
IC202 CS5331A



IC501, 502 NJM4580M

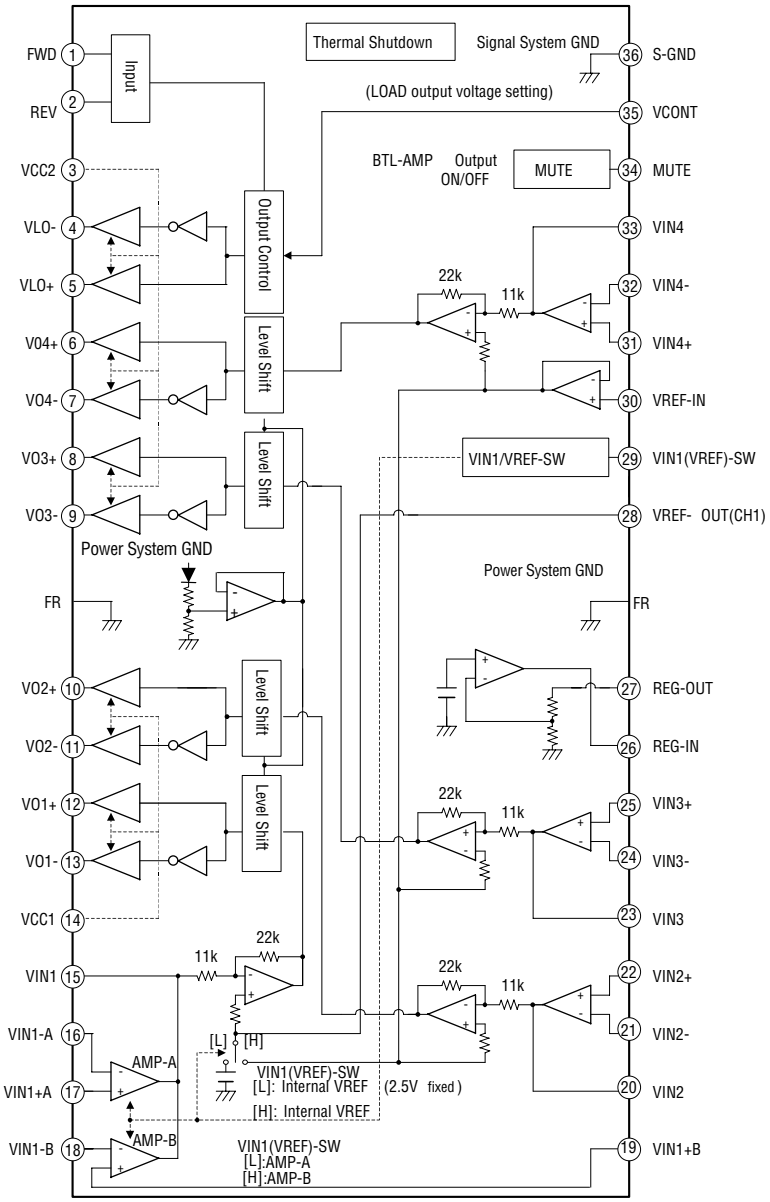


IC601 BU4052BCFV

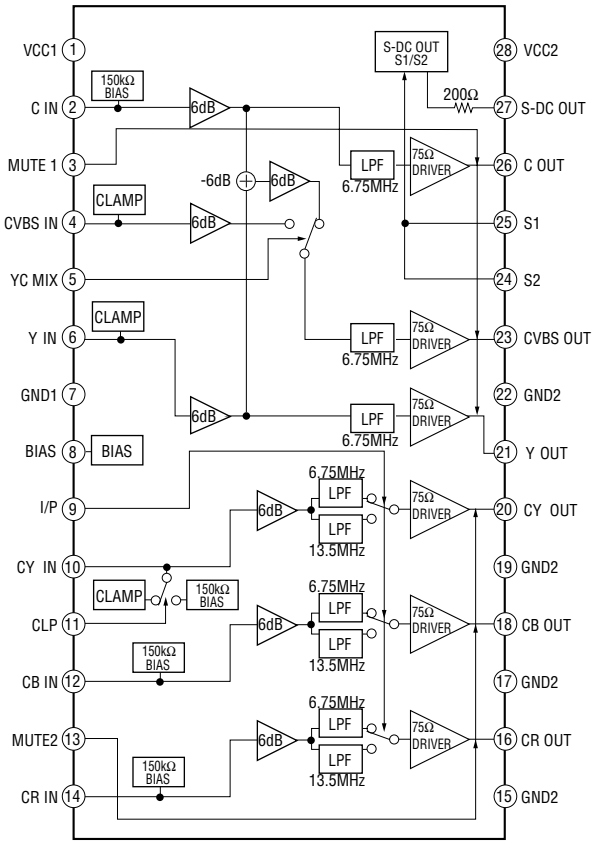


– DVD Board –

IC202 L6560-A-TE



IC5C1 MM1623XFBE



• **IC Pin Function Description**

AMP BOARD IC101 LC87684C-54C7 (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	DVD_RESET	O	Reset signal output to DVD
2	P_CTL	O	Power control signal output
3	DVD_CE	O	CE signal to DVD
4	/STEREO	I	Stereo signal output from the tuner
5	T_CE	O	CE signal output to the tuner
6	T_RDS_DATA	O	RDS DATA to the tuner
7	T_CLK	O	Clock signal to the tuner
8	T.DO	O	DATA output to the tuner
9	T_DI	I	DATA input from the tuner
10	T_RDS_CLK	O	RDS clock to the tuner
11	RESET	I	Reset signal input
12	XT1	—	Not used
13	XT2	—	Not used
14	VSS1	—	Ground terminal
15	CF1	—	Resonator terminal(9.8304MHz)
16	CF2	—	Resonator terminal(9.8304MHz)
17	VDD1	—	Power suply terminal(+5V)
18	KEY1	I	Key AD input1
19	KEY2	I	Key AD input2(Not used)
20	VOL_UP	I	Volume up input(Not used)
21	VOL_DN	I	Volume down input(Not used)
22	4052A	O	Signal output to the Selector_A
23	4052B	O	Signal output to the Selector_B
24	HP_DET	I	Detect signal input from the Headphone
25	HP_MUTE	O	Muting signal output to the Headphone
26	PWRSNS	I	Sense signal from Vdd
27	STBY_LED	O	Standby LED control signal output
28	NC	—	Not used
29	REMOCON	I	Input signal from the REMOCON
30 to 40	G1 to G11	O	Segment signal output to the fluorescent indicator tube
41 to 45	P17 to P13	O	Segment signal output to the fluorescent indicator tube
46	VDD3	—	Power suply terminal(+5V)
47 to 50	P12 to P9	O	Segment signal output to the fluorescent indicator tube
51	VP	—	Power suply terminal(-28.5V)
52 to 59	P8 to P1	O	Segment signal output to the fluorescent indicator tube
60	NC60	—	Not used
61	NC61	—	Not used
62	NC62	—	Not used
63	NC63	—	Not used
64	OPTION	I	Option terminal
65	NC65	—	Not used
66	NC66	—	Not used
67	NC67	—	Not used
68	MICDET2	—	Detect signal from the microphone(Not used)
69	MICDET1	—	Detect signal from the microphone(Not used)
70	501/505_TH_WAR	I	Thermal warning advisor signal Input from the Audio Amp
71	501/505_FAULT	O	Fault pin advisor signal output to the Audio Amp

Pin No.	Pin Name	I/O	Description
72	VDD4	—	Power suply terminal(+5V)
73	9818_PDN	O	PDN signal output to the Audio Dac
74	9818_RESET	O	Reset signal output to the Audio Dac
75	NC75	—	Not used
76	NC76	—	Not used
77	16:9/4:3	O	Output signal of TV MODE change
78	TV_MODE	O	Output signal of TV MODE
79	R/G/B_VIDEO	O	R/G/B signal output
80	NC80	—	Not used
81	NC81	—	Not used
82	NC82	—	FAN ON/OFF Control input(SB200)
83	NC83	—	Not used
84	NC84	—	Not used
85	505_PDN	O	Standby signal output to the Audio Amp
86	NC86	—	Not used
87	NC87	—	Not used
88	9818_CLK	O	Clock signal output to the Audio Dac
89	VSS2	—	Ground terminal
90	VDD2	—	Power suply terminal(+5V)
91	9818_SDA	O	SDA signal output to the Audio Dac
92	NC92	—	Not used
93	NC93	—	Not used
94	NC94	—	Not used
95	DATA1	O	DATA1 signal output terminal(Not Used)
96	DATA0	O	DATA0 signal output terminal(Not Used)
97	CLK	O	Clock signal output terminal(Not Used)
98	DVD_SO	O	DATA signal output to the Mpeg&Video Process
99	D_SI	I	DATA signal input from the Mpeg&Video Process
100	D_CK	O	Clock signal output to the Mpeg&Video Process

AMP BOARD IC301 PS9818 (DIGITAL AUDIO PROCESSOR)

Pin No.	Pin Name	I/O	Description
1	IO_VSS1	—	I/O digital ground.
2	PLL_DVSS	—	PLL digital ground.
3	PLL_DVDD	—	PLL peripheral digital power supply. 2.5V supply voltage.
4	PLL_XPD	I	Internal PLL Power Down. Active Low.
5	PLL_CPC	I	Internal PLL Charge Pump Current Selection input.
6	PLL_AVDD	—	PLL analog power supply. 2.5V supply voltage.
7	PLL EXT LPF	I	External PLL low pass filter pin.
8	PLL_AVSS	—	PLL analog ground.
9	IO_VSS9	—	I/O digital ground.
10	IO_VDD10	—	3.3V Digital power supply. I/O power supply.
11	MBCK	I/O	PCM bit clock input/output of main 8-channel audio.
12	MLRCK	I/O	PCM Word clock (left-right clock) input/output of main 8-channel audio
13	DVDD13	—	2.5V Digital power supply. Core power supply.
14	DVSS14	—	Core digital ground.
15 to 18	MSDIN[3:0]	I	PCM serial data input of main 8-channel audio.
19	SBCK	I/O	PCM Word clock (left-right clock) input/output of main 8-channel audio.
20	SLRCK	I/O	PCM Word clock (left-right clock) input/output of sub 8-channel
21	IO_VSS21	—	I/O digital ground.
22	IO_VDD22	—	3.3V Digital power supply. I/O power supply.
23 to 26	SSDIN[3:0]	I/O	PCM serial data input of sub-channel audio.
27	EXT_MUTE	I	External mute control input. Active High.
28	IO_VSS28	—	I/O digital ground.
29	IO_VDD29	—	3.3V Digital power supply. I/O power supply.
30	MIC_MCLK	O	Main clock for external microphone input A/DC.
31	MIC_BCK	O	PCM bit clock output of external microphone.
32	MIC_LRCK	O	PCM Word clock (left-right clock) output of external microphone.
33	MIC_SDIN	I	PCM serial data input of external microphone.
34	DVDD34	—	2.5V Digital power supply. Core power supply.
35	DVSS35	—	Core digital ground.
36	PWM_SWL_	O	Negative PWM output of subwoofer line output.
37	PWM_SWL_	O	Positive PWM output of subwoofer line output.
38	IO_VSS38	—	I/O digital ground.
39	IO_VDD39	—	3.3V Digital power supply. I/O power supply.
40	PWM_HP_	O	Negative PWM output of headphone right channel.
41	PWM_HP_	O	Positive PWM output of headphone right channel.
42	DVDD42	—	2.5V Digital power supply. Core power supply.
43	DVSS43	—	Core digital ground.
44	IO_VSS44	—	I/O digital ground.
45	PWM_HP_	O	Negative PWM output of headphone left channel.
46	PWM_HP_	O	Positive PWM output of headphone left channel. Negative PWM output of headphone left channel.
47	IO_VDD47	—	3.3V Digital power supply. I/O power supply.
48	PWM1_M	O	Negative PWM output of channel 1.
49	PWM1_	O	Positive PWM output of channel 1.
50	IO_VSS50	—	I/O digital ground.
51	PWM2_M	O	Negative PWM output of channel 2.
52	PWM2_	O	Positive PWM output of channel 2.
53	IO_VSS53	—	I/O digital ground.

Pin No.	Pin Name	I/O	Description
54	PWM3_M	O	Negative PWM output of channel 3.
55	PWM3_	O	Positive PWM output of channel 3.
56	IO_VDD56	—	3.3V Digital power supply. I/O power supply.
57	IO_VSS57	—	I/O digital ground.
58	PWM4_M	O	Negative PWM output of channel 4.
59	PWM4_	O	Positive PWM output of channel 4.
60	IO_VSS60		I/O digital ground.
61	PWM5_M	O	Negative PWM output of channel 5.
62	PWM5_	O	Positive PWM output of channel 5.
63	DVSS63	—	Core digital ground.
64	IO_VSS64	—	I/O digital ground.
65	IO_VDD65	—	3.3V Digital power supply. I/O power supply.
66	DVDD66	—	2.5V Digital power supply. Core power supply.
67	PWM6_M	O	Negative PWM output of channel 6.
68	PWM6_	O	Positive PWM output of channel 6.
69	IO_VSS69	—	I/O digital ground.
70	PWM7_M	O	Negative PWM output of channel 7.
71	PWM7_	O	Positive PWM output of channel 7.
72	IO_VDD	—	3.3V Digital power supply. I/O power supply.
73	IO_VSS	—	I/O digital ground.
74	PWM8_M	O	Negative PWM output of channel 8.
75	PWM8_P	O	Positive PWM output of channel 8.
76	OVERLOAD	I	Power stage overload indication input.
77	EPD_ENA	O	External amplifier power device enable output. Active High.
78	SO/SDA	I/O	SO for SPI mode or SDA for I2C mode.
79	SCK/SCL	I	SCK for SPI mode or SCL for I2C mode.
80	DVDD80	—	2.5V Digital power supply. Core power supply.
81	DVSS81	—	Core digital ground.
82	SI/I2C_AD0	I	SI for SPI mode or Slave Address 0 for I2C mode.
83	/CS/I2C_AD2	I	Chip selector (CS) for SPI mode or Slave Address 2 for I2C mode.
84	SPI/I2C	I	Host interface mode (SPI or I2C) selector.
85	IO_VSS	—	I/O digital ground.
86	CLK_	I	External clock input. 12.288MHz is recommended.
87	IO_VDD	—	3.3V Digital power supply. I/O power supply.
88	DMIX_LRCK	O	PCM Word clock (left-right clock) output of downmix signal.
89	DMIX_BCK	O	PCM bit clock output of downmix signal.
90	DMIX_SDOUT	O	PCM serial data output of downmix signal.
91	DVDD80	—	2.5V Digital power supply. Core power supply.
92	DVSS63	—	Core digital ground.
93	DMIX_MCLK	O	Main clock for external downmix line output D/AC.
94	IO_VSS94	—	I/O digital ground.
95	IO_VDD95	—	3.3V Digital power supply. I/O power supply.
96	/RESET	I	H/W reset signal. Active Low Schmitt-Trigger input.
97	TEST_MODE1	I	Test mode selection pin 1.
98	TEST_MODE2	I	Test mode selection pin 2.
99	SCAN_ENA	I	Scan enable. Active High.
100	TEST_MODE3	I	Test mode selection pin 3.

SECTION 8
EXPLODED VIEWS

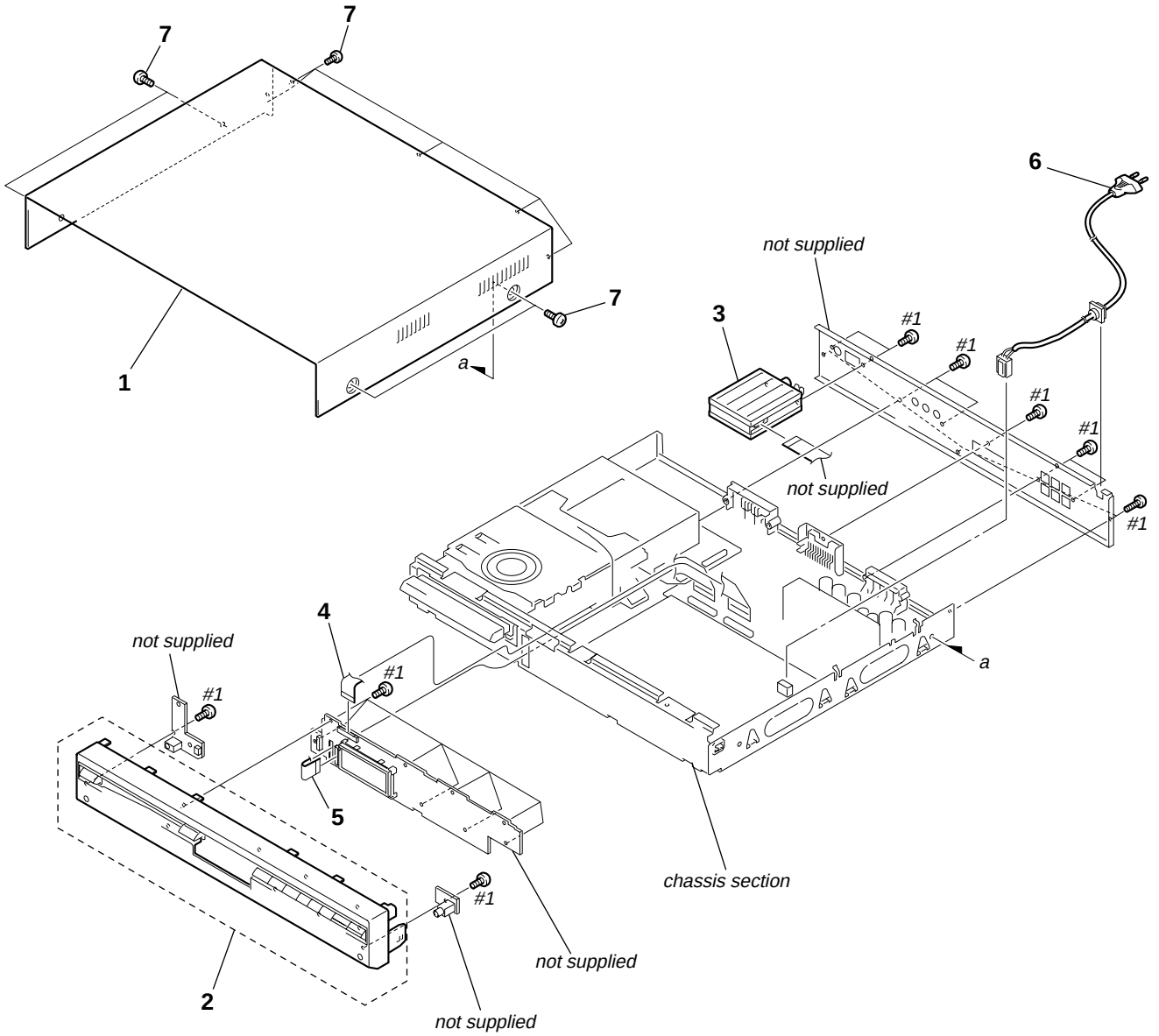
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  EA : Saudi Arabia model
  EE : East European model
  RU : Russian model
  SP : Singapore model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

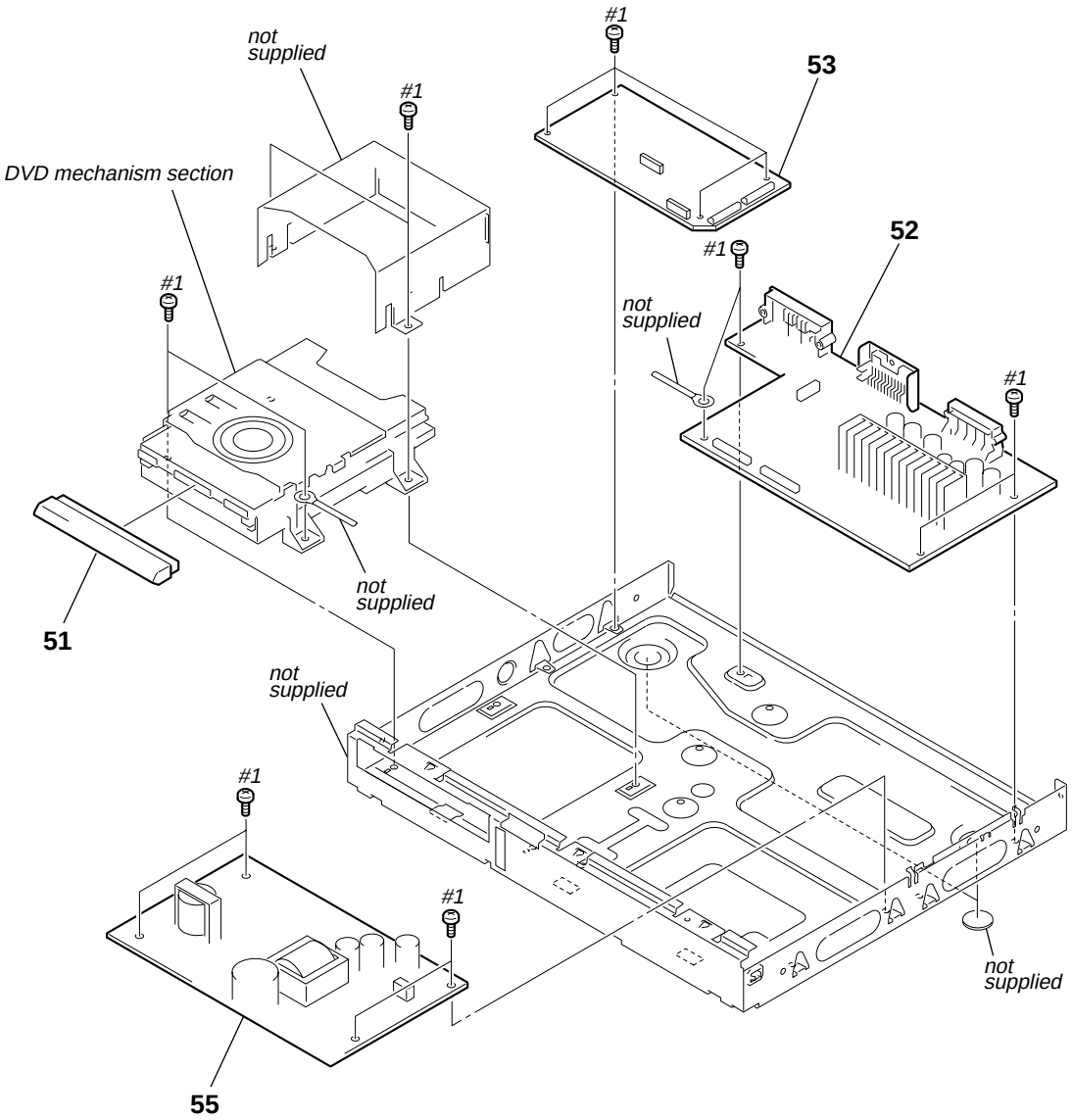
8-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remark
1	9-885-069-35	TOP COVER	
2	9-885-070-89	FRONT PANEL ASSY (200:UK,AEP,EE)	
2	9-885-070-90	FRONT PANEL ASSY (200:RU,SP,AUS)	
2	9-885-069-43	FRONT PANEL ASSY (US,AUS,CND,EA,RU,SP)	
2	9-885-069-23	FRONT PANEL ASSY (100:UK,AEP,EE)	
3	9-885-069-34	TUNER PACK (UK,AEP,EE)	
3	9-885-069-54	TUNER PACK (US,AUS,CND,EA,SP)	
3	9-885-069-53	TUNER PACK (RU)	
4	9-885-069-29	CABLE FLAT 23P	
5	9-885-069-30	CABLE FLAT 24P	

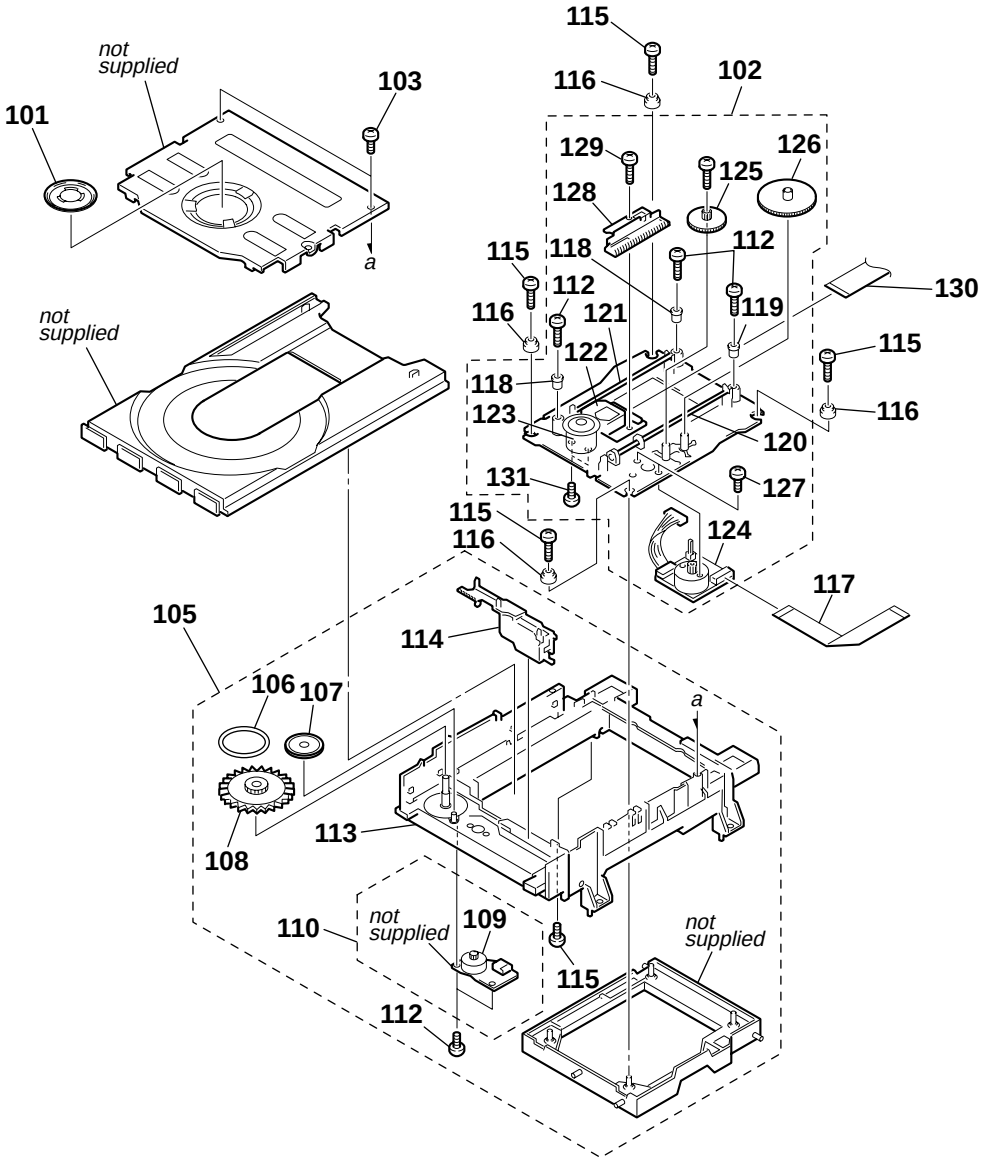
Ref. No.	Part No.	Description	Remark
⚠6	9-885-069-36	POWER CORD (100:UK)	
⚠6	9-885-069-57	POWER CORD (100:US,CND)	
⚠6	9-885-069-56	POWER CORD (100:AUS)	
⚠6	9-885-069-55	POWER CORD (100:AEP,EE,RU,SP)	
⚠6	9-885-069-36	POWER CORD (100:EA)	
⚠6	9-885-072-40	POWER CORD (200:EXCEPT AUS)	
⚠6	9-885-072-41	POWER CORD (200:AUS)	
7	3-363-099-62	SCREW (CASE 3TP2)	
#1	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	

8-2. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
51	9-885-069-27	DOOR DVD	
52	9-885-071-11	AMP BOARD ASSY (200:UK,AEP,EE)	
52	9-885-071-12	AMP BOARD ASSY (200:RU)	
52	9-885-071-13	AMP BOARD ASSY (200:SP,AUS)	
52	9-885-069-52	AMP BOARD ASSY (US,CND)	
52	9-885-069-51	AMP BOARD ASSY (AUS,EA,SP)	
52	9-885-069-33	AMP BOARD ASSY (100:UK,AEP,EE)	
52	9-885-069-50	AMP BOARD ASSY (RU)	
53	9-885-069-32	DVD BOARD ASSY (UK,AEP)	
53	9-885-069-49	DVD BOARD ASSY (US,CND)	
53	9-885-069-47	DVD BOARD ASSY (AUS)	
53	9-885-069-45	DVD BOARD ASSY (EE)	
53	9-885-069-46	DVD BOARD ASSY (RU)	
53	9-885-069-48	DVD BOARD ASSY (SP)	
53	9-885-072-39	DVD BOARD ASSY (EA)	
55	9-885-071-05	POWER BOARD ASSY (200:UK)	
55	9-885-071-63	POWER BOARD ASSY (US,AUS,CND,RU)	
55	9-885-069-31	POWER BOARD ASSY (100:UK,AEP,EE,EA,SP)	
#1	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	

8-3. DVD MECHANISM SECTION



Ref. No.	Part No.	Description	Remark
101	9-885-072-02	CLAMP ASSEMBLY	
102	9-885-072-04	BASE ASSEMBLY	
103	9-885-072-33	SCREW, DRAWING	
105	9-885-072-03	BASE ASSEMBLY	
106	9-885-072-13	BELT	
107	9-885-072-14	GEAR	
108	9-885-072-19	GEAR	
109	9-885-072-16	MOTOR ASSEMBLY	
110	9-885-072-15	MOUNTED C.BOARD, JACK (AUDIO) (including LD MOTOR)	
112	9-885-072-35	SCREW, DRAWING	
113	9-885-072-21	BASE	
114	9-885-072-20	GUIDE	
115	9-885-072-34	SCREW, DRAWING	
116	9-885-072-12	RUBBER	
117	9-885-072-09	CABLE, FLAT	
118	9-885-072-25	CAP	
119	9-885-072-26	CAP	
120	9-885-072-30	SHAFT	
121	9-885-072-29	SHAFT	
⚠122	9-885-072-32	OPTICAL PICK-UP	
123	9-885-072-22	MOTOR (MECH)	
124	9-885-072-23	MOTOR ASSEMBLY	
125	9-885-072-27	GEAR	
126	9-885-072-24	GEAR	
127	9-885-072-38	SCREW, DRAWING	
128	9-885-072-31	GEAR ASSEMBLY	
129	9-885-072-36	SCREW, DRAWING	
130	9-885-072-11	CABLE, FLAT	
131	9-885-072-37	SCREW, DRAWING	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. ., uPA. . : µPA. .,
  uPB. . : µPB. ., uPC. . : µPC. .,
  uPD. . : µPD. .
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  EA : Saudi Arabia model
  EE : East European model
  RU : Russian model
  SP : Singapore model

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
	9-885-071-11	AMP BOARD ASSY (200:UK,AEP,EE)	
	9-885-071-12	AMP BOARD ASSY (200:RU)	
	9-885-071-13	AMP BOARD ASSY (200:SP,AUS)	
	9-885-069-52	AMP BOARD ASSY (US,CND)	
	9-885-069-51	AMP BOARD ASSY (AUS,EA,SP)	
	9-885-069-33	AMP BOARD ASSY (100:UK,AEP,EE)	
	9-885-069-50	AMP BOARD ASSY (RU)	
		**********	
		< DIODE >	
D101	9-885-073-19	DIODE RECTIFIERS	
D102	9-885-073-19	DIODE RECTIFIERS	
D103	9-885-073-19	DIODE RECTIFIERS	
D104	9-885-073-19	DIODE RECTIFIERS	
D105	9-885-073-19	DIODE RECTIFIERS	
D111	8-719-991-34	DIODE SWITCHING (US,CND)	
D114	8-719-991-34	DIODE SWITCHING (US,CND)	
D115	8-719-991-34	DIODE SWITCHING (US,CND)	
D116	8-719-991-34	DIODE SWITCHING (AEP,UK,EE)	
D117	8-719-991-34	DIODE SWITCHING (AEP,UK,RU,EE)	
D119	8-719-991-34	DIODE SWITCHING (200)	
D300	9-885-073-19	DIODE RECTIFIERS	
D301	8-719-991-34	DIODE SWITCHING	
D600	8-719-991-34	DIODE SWITCHING (AEP,UK,RU,EE)	
D800	8-719-991-34	DIODE SWITCHING (200)	
D801	8-719-991-34	DIODE SWITCHING (200)	
D981	8-719-991-34	DIODE SWITCHING	
		< FILTER >	
FB508	1-795-645-11	FILTER, CERAMIC (EMI)	
FB509	1-795-645-11	FILTER, CERAMIC (EMI)	
FB601	1-795-645-11	FILTER, CERAMIC (EMI)	
FB602	1-795-645-11	FILTER, CERAMIC (EMI)	
FB603	1-795-645-11	FILTER, CERAMIC (EMI)(US,CND,SP,EA,AUS)	
FB604	1-795-645-11	FILTER, CERAMIC (EMI)(US,CND,SP,EA,AUS)	
FB605	1-795-645-11	FILTER, CERAMIC (EMI)(US,CND,SP,EA,AUS)	
FB606	1-795-645-11	FILTER, CERAMIC (EMI)	
FB607	1-795-645-11	FILTER, CERAMIC (EMI)	
FB612	1-795-645-11	FILTER, CERAMIC (EMI)(AEP,UK.RU,EE)	
FB613	1-795-645-11	FILTER, CERAMIC (EMI)(AEP,UK.RU,EE)	
FB614	1-795-645-11	FILTER, CERAMIC (EMI)(AEP,UK.RU,EE)	
FB615	1-795-645-11	FILTER, CERAMIC (EMI)(AEP,UK.RU,EE)	
FB616	1-795-645-11	FILTER, CERAMIC (EMI)(AEP,UK.RU,EE)	
FB617	1-795-645-11	FILTER, CERAMIC (EMI)(AEP,UK.RU,EE)	

Ref. No.	Part No.	Description	Remark
		< IC >	
☆ IC101	9-885-073-39	IC LC876848C-54C7	
IC202	9-885-073-36	IC CS5331A-KSR	
IC301	9-885-073-48	IC PS9818	
IC501	8-759-656-83	IC NJM4580M 8	
IC502	8-759-656-83	IC NJM4580M 8	
IC601	9-885-073-54	IC BU4052BCFV	
IC710	9-885-054-79	IC STA505-5C (100)	
IC710	9-885-073-52	IC STA-508 STM (200)	
IC730	9-885-054-79	IC STA505-5C (100)	
IC730	9-885-073-52	IC STA-508 STM (200)	
IC750	9-885-073-51	IC STA501 STM (100)	
IC750	9-885-073-52	IC STA-508 STM (200)	
IC770	9-885-054-79	IC STA505-5C (100)	
IC770	9-885-073-52	IC STA-508 STM (200)	
		< JACK >	
JK601	9-885-073-89	JACK,RCA (MONITOR OUT,VIDEO) (AEP,UK,RU,EE)	
JK601	9-885-073-90	JACK,RCA (COMPONENT VIDEO OUT) (US,CND,SP,EA,AUS)	
JK602	9-885-073-91	JACK,SCART (EURO AV OUTPUT (TO TV)) (AEP,UK,RU,EE)	
		< FILTER/COIL >	
L102	1-795-645-11	FILTER, CERAMIC (EMI)	
L103	1-795-645-11	FILTER, CERAMIC (EMI)	
L104	1-795-645-11	FILTER, CERAMIC (EMI)	
L105	1-795-645-11	FILTER, CERAMIC (EMI)	
L106	1-795-645-11	FILTER, CERAMIC (EMI)	
L200	1-795-645-11	FILTER, CERAMIC (EMI)	
L207	9-885-073-57	INDUCTOR,AXIAL LEAD (200)	
L208	9-885-073-57	INDUCTOR,AXIAL LEAD (200)	
L300	1-795-645-11	FILTER, CERAMIC (EMI)	
L301	1-795-645-11	FILTER, CERAMIC (EMI)	
L303	1-795-645-11	FILTER, CERAMIC (EMI)	
L304	1-795-645-11	FILTER, CERAMIC (EMI)	
L305	1-795-645-11	FILTER, CERAMIC (EMI)	
L309	1-795-645-11	FILTER, CERAMIC (EMI)	
L710	1-795-645-11	FILTER, CERAMIC (EMI)	
L730	1-795-645-11	FILTER, CERAMIC (EMI)	
L750	1-795-645-11	FILTER, CERAMIC (EMI)	
L770	1-795-645-11	FILTER, CERAMIC (EMI)	

☆ When IC101 (system controller) is exchanged, refer to Attention when IC101 (system controller) exchanged (page 5).

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
PN101	9-885-055-76	CONNECTOR (CIRC),FFC/FPC	
PN102	9-885-074-00	CONNECTOR (CIRC),FFC/FPC 24P	
PN103	9-885-054-96	CONNECTOR (CIRC),FFC/FPC 12P	
PN200	9-885-073-96	CONNECTOR (CIRC),BOARD TO BOAR 14P	
PN201	9-885-073-96	CONNECTOR (CIRC),BOARD TO BOAR 14P	
PN800	9-885-073-71	CONNECTOR (CIRC),HOUSING 2P (200)	
PN901	9-885-073-95	CONNECTOR (CIRC),BOARD TO BOAR 10P	
PN902	9-885-073-95	CONNECTOR (CIRC),BOARD TO BOAR 10P	
		< TRANSISTOR >	
Q101	9-885-073-60	TRANSISTOR BIPOLARS KRC103M	
Q503	9-885-073-67	TRANSISTOR KTD1302	
Q504	9-885-073-67	TRANSISTOR KTD1302	
Q601	9-885-073-64	TRANSISTOR BIPOLARS KTA1267-Y	(AEP,UK,RU,EE)
Q602	9-885-073-68	TRANSISTOR KTC3198-TP-BL (AEP,UK,RU,EE)	
Q603	9-885-073-60	TRANSISTOR BIPOLARS KRC103M	(AEP,UK,EE,RU)
Q604	9-885-073-60	TRANSISTOR BIPOLARS KRC103M	(AEP,UK,EE,RU)
Q605	9-885-073-60	TRANSISTOR BIPOLARS KRC103M	(AEP,UK,EE,RU)
Q606	9-885-073-68	TRANSISTOR KTC3198-TP-BL	
Q607	9-885-073-68	TRANSISTOR KTC3198-TP-BL (AEP,UK,RU,EE)	
Q609	9-885-073-60	TRANSISTOR BIPOLARS KRA102M	
Q701	9-885-073-68	TRANSISTOR KTC3198-TP-BL (200)	
Q702	9-885-073-63	TRANSISTOR KTA1266-GR (200)	
Q971	9-885-073-66	TRANSISTOR KTA1281Y	
Q972	8-729-043-89	TRANSISTOR KTC3205-TP-Y	
Q973	9-885-073-68	TRANSISTOR KTC3198-TP-BL	
Q975	8-729-043-89	TRANSISTOR KTC3205-TP-Y	
Q982	9-885-073-61	TRANSISTOR BIPOLARS KRA103M	
Q983	9-885-073-64	TRANSISTOR BIPOLARS KTA1267-Y (200)	
		< VIBRATOR >	
X101	9-885-054-89	RESONATOR,CRYSTAL (9.8304MHz)	
X201	9-885-054-90	VIBRATOR, CRYSTAL (12.288MHz)	
		< DIODE >	
ZD100	9-885-073-33	DIODE ZENER GDZJ9.1C	
ZD971	9-885-073-29	DIODE ZENER UZ-30BSC	
ZD972	9-885-073-32	DIODE ZENER GDZJ5.1B	
ZD973	9-885-073-32	DIODE ZENER GDZJ5.1B	
ZD974	9-885-073-28	DIODE ZENER GDZJ2.7A	
ZD981	9-885-073-31	DIODE ZENER GDZJ4.7B	

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Ref. No.	Part No.	Description	Remark
	9-885-069-32	DVD BOARD ASSY(UK,AEP)	
	9-885-069-49	DVD BOARD ASSY(US,CND)	
	9-885-069-47	DVD BOARD ASSY(AUS)	
	9-885-069-45	DVD BOARD ASSY(EE)	
	9-885-069-46	DVD BOARD ASSY(RU)	
	9-885-069-48	DVD BOARD ASSY(SP)	
	9-885-072-39	DVD BOARD ASSY(EA)	
		**********	
		< IC >	
IC201	9-885-041-57	IC MT1336E/BP	
IC202	9-885-073-50	IC LA6560	
IC501	9-885-073-38	IC 1379EEC	
IC505	----------	IC S524A40	
IC506	9-885-073-40	IC M12L64164A-7T	
IC5A1	----------	IC MBM29LV160TE70NC	
IC5C1	9-885-041-64	IC MM1623XFBE	
		< CONNECTOR >	
J6	9-885-073-73	CONNECTOR (CIRC),HOUSING	
		< COIL/FILTER >	
L201	9-885-073-59	INDUCTOR,RADIAL LEAD	
L202	9-885-058-23	FILTER(CIRC),EMC	
L203	9-885-073-59	INDUCTOR,RADIAL LEAD	
L204	9-885-058-23	FILTER(CIRC),EMC	
L231	9-885-058-23	FILTER(CIRC),EMC	
L251	9-885-058-23	FILTER(CIRC),EMC	
L264	9-885-058-23	FILTER(CIRC),EMC	
L265	9-885-058-23	FILTER(CIRC),EMC	
L501	9-885-058-23	FILTER(CIRC),EMC	
L502	9-885-058-23	FILTER(CIRC),EMC	
L504	9-885-058-23	FILTER(CIRC),EMC	
L5C1	9-885-058-23	FILTER(CIRC),EMC	
L603	9-885-058-23	FILTER(CIRC),EMC	
L604	9-885-058-23	FILTER(CIRC),EMC	
		< CONNECTOR >	
PDA02	9-885-073-94	CONNECTOR (CIRC),BOARD TO BOAR 14P	
PDA03	9-885-073-94	CONNECTOR (CIRC),BOARD TO BOAR 14P	
PDM01	9-885-055-76	CONNECTOR (CIRC),FFC/FPC	
PDM02	9-885-055-75	CONNECTOR (CIRC),FFC/FPC	
		< TRANSISTOR >	
Q201	9-885-033-24	TRANSISTOR CHIP KTC3875S	
Q202	8-729-048-50	TRANSISTOR BIPOLARS 2SK3018 T106	
Q203	8-729-048-50	TRANSISTOR BIPOLARS 2SK3018 T106	
Q204	9-885-073-62	TRANSISTOR BIPOLARS 2SA1037K-Q	
Q205	9-885-073-62	TRANSISTOR BIPOLARS 2SA1037K-Q	
Q501	9-885-033-24	TRANSISTOR CHIP KTC3875S	
		< COIL >	
R521	9-885-073-58	INDUCTOR CHIP	
		< VIBRATOR >	
X501	9-885-040-11	RESONATOR, CRYSTAL (27MHz)	

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Ref. No.	Part No.	Description	Remark
		EAR PHONE BOARD	
		**********	
		< JACK >	
JK002	9-885-073-92	JACK,PHONE (PHONES)	
		**********	
		FRONT BOARD	
		**********	
		< CONNECTOR >	
PN001	9-885-073-99	CONNECTOR (CIRC),FFC/FPC 23P	
PN002	9-885-073-98	CONNECTOR (CIRC),FFC/FPC 24P	
PN003	9-885-073-75	CONNECTOR (CIRC),WAFER 6P	
PN004	9-885-073-75	CONNECTOR (CIRC),WAFER 6P	
		< SWITCH >	
SW001	1-572-184-21	SWITCH,TACT (VOLUME +)	
SW002	1-572-184-21	SWITCH,TACT (VOLUME –)	
SW003	1-572-184-21	SWITCH,TACT (FUNCTION)	
SW004	1-572-184-21	SWITCH,TACT (▶▶I, PRESET +)	
SW005	1-572-184-21	SWITCH,TACT (I◀◀, PRESET –)	
SW006	1-572-184-21	SWITCH,TACT (■)	
SW007	1-572-184-21	SWITCH,TACT (❚❚)	
SW008	1-572-184-21	SWITCH,TACT (▷)	
SW009	1-572-184-21	SWITCH,TACT (⏏)	
SW010	1-572-184-21	SWITCH,TACT (I/⏻)	
		< DIGITRON >	
VFD001	9-885-073-82	DIGITRON 11BT-227GNK	
		**********	
		LED BOARD	
		**********	
		< DIODE >	
LD001	9-885-073-18	LED SLR-342VRT32 (STANDBY)	
		< IC >	
RMC001	9-885-067-83	IC TSOP4840RF1	
		< TRANSISTOR >	
TR1	9-885-073-61	TRANSISTOR BIPOLARS KRA103M	
		**********	
	9-885-071-05	POWER BOARD ASSY (200:UK)	
	9-885-071-63	POWER BOARD ASSY (US,AUS,CND,RU)	
	9-885-069-31	POWER BOARD ASSY (100:UK,AEP,EE,EA,SP)	
		**********	
		< DIODE >	
⚠BD901	9-885-073-21	DIODE RECTIFIERS GBU6J (100)	
⚠BD901	9-885-073-26	DIODE RECTIFIERS GBU8J (200)	
		< CAPACITOR >	
⚠C900	9-885-073-15	CAPACITOR SEMI CERAMIC 1000PF 400V M E(Z5U) R	
⚠C901	9-885-073-15	CAPACITOR SEMI CERAMIC 1000PF 400V M E(Z5U) R	
⚠C902	9-885-073-15	CAPACITOR SEMI CERAMIC 1000PF 400V M E(Z5U) R	
⚠C904	9-885-058-16	CAPACITOR FIXED ELECTROLYTIC 330UF KMH 450V	

Ref. No.	Part No.	Description	Remark
⚠C954	9-885-073-80	CAPACITOR HI-VOL 470P/1K	
⚠CM901	9-885-073-81	CAPACITOR DRAWING 435D	
⚠CM902	9-885-073-81	CAPACITOR DRAWING 435D	
		< CONNECTOR >	
CN901	9-885-073-93	CONNECTOR (CIRC),BOARD TO BOAR 10P	
CN902	9-885-073-93	CONNECTOR (CIRC),BOARD TO BOAR 10P	
CN903	9-885-073-76	CONNECTOR (CIRC) WAFER 10P	
		< DIODE >	
⚠D901	9-885-073-16	DIODE RECTIFIERS EG01C	
⚠D902	8-719-085-16	DIODE RECTIFIERS EU01W	
⚠D903	8-719-085-16	DIODE RECTIFIERS EU01W	
⚠D911	8-719-085-16	DIODE RECTIFIERS EU01W (100)	
⚠D911	9-885-073-20	DIODE RECTIFIERS ERA18-02 (200)	
⚠D912	8-719-991-34	DIODE SWITCHING	
⚠D913	9-885-073-20	DIODE RECTIFIERS ERA18-02 (200)	
⚠D914	9-885-073-16	DIODE RECTIFIERS EG01C (200)	
D921	8-719-085-16	DIODE RECTIFIERS EU01W	
D922	9-885-073-25	DIODE RECTIFIERS SB360	
D923	9-885-073-24	DIODE RECTIFIERS UG4D	
D924	9-885-073-25	DIODE RECTIFIERS SB360	
D926	8-719-085-16	DIODE RECTIFIERS EU01W	
D927	8-719-085-16	DIODE RECTIFIERS EU01W	
D928	8-719-941-48	DIODE SWITCHING 1N4148	
D929	8-719-991-34	DIODE SWITCHING	
D932	8-719-991-34	DIODE SWITCHING	
D933	8-719-991-34	DIODE SWITCHING	
D941	8-719-085-16	DIODE RECTIFIERS EU01W	
D942	9-885-073-17	DIODE RECTIFIERS 1N5402	
D951	9-885-055-56	DIODE RECTIFIERS FFPF20U20S	
		< FUSE >	
⚠F901	9-885-073-34	FUSE,SLOW BLOW (5000mA 250V) (100)	
⚠F901	9-885-073-35	FUSE,SLOW BLOW (6300mA 250V) (200)	
		< FILTER >	
FB901	9-885-073-85	FILTER(CIRC),EMC	
FB902	9-885-073-85	FILTER(CIRC),EMC	
		< IC >	
⚠IC901	9-885-073-46	IC FSDM0365RN	
⚠IC902	9-885-073-45	IC KA5Q1265RF (100)	
⚠IC902	9-885-073-49	IC STR-X6757 (200)	
IC921	9-885-073-43	IC KA378R05	
IC922	9-885-073-44	IC KA78R12TSTU	
IC923	8-759-544-11	IC KA78R33TSTU	
IC924	9-885-073-47	IC KIA7808A	
IC941	9-885-073-56	IC KA431AZ	
IC942	9-885-073-56	IC KA431AZ	
		< COIL >	
L921	9-885-073-84	COIL,CHOKE	
L922	9-885-073-84	COIL,CHOKE	
L923	9-885-073-84	COIL,CHOKE	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		< SENSOR >	
⚠PC910	8-749-018-95	SENSOR LTV-817B,PHOTO COUPLER(LITEON)	
⚠PC911	8-749-018-95	SENSOR LTV-817B,PHOTO COUPLER(LITEON)	
⚠PC912	8-749-018-95	SENSOR LTV-817B,PHOTO COUPLER(LITEON)	
		< CONECTOR >	
PN901	9-885-073-70	CONNECTOR(CIRC),DRAWING 3P	
		< TRANSISTOR >	
Q910	9-885-073-65	TRANSISTOR BIPOLARS KTA1268-BL	
Q921	8-729-043-89	TRANSISTOR KTC3205-TP-Y	
Q922	8-729-040-76	TRANSISTOR KTA1273-TP-Y	
		< TRANSFORMER >	
⚠T901	9-885-073-79	TRANSFORMER,SMPS[COIL]	
⚠T902	9-885-073-77	TRANSFORMER,SMPS[COIL]	
		< THERMISTOR >	
⚠TH901	9-885-055-61	THERMISTOR,PTC	
		< DIODE >	
⚠ZD911	8-719-982-93	DIODE ZENERS UZ-2.2BSA (200)	
⚠ZD911	9-885-073-31	DIODE ZENER GDZJ4.7B (100)	
ZD921	9-885-073-27	DIODE ZENERS GDZJ12C	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2004.09	New
1.1	2004.11	• Addition of SERVICING NOTES, DISASSEMBLY and ELECTRICAL TROUBLE SHOOTING GUIDE • Addition of TEST MODE, ELECTRICAL ADJUSTMENTS and ELECTRICAL PARTS LIST • Correction of DIAGRAMS, EXPLODED VIEWS
1.2	2004.12	Deletion of “AUTO SERVO ADJUSTMENT” (SPM-04126) Correction of Part No. of Ref. No. 53 for EA model (SPM-04127)
1.3	2005.01	Change of Parts No. for Ref. No. Q101, Q603, Q604 and Q605 on AMP Board (SPM-05004)
1.4	2005.04	Correction of Parts No. of Ref.No. 109, 110, 117 and 130. (SPM-05025)
1.5	2005.06	Change of supply form for IC505 and IC5A1 Addition of attention when IC101 exchanged (SPM-05039)
1.6	2005.09	Correction of Part No. DVD BOARD ASSY for Saudi Arabia model (SPM-05059)
1.7	2005.12	Changed into “not supplied” from “Ref. No. 104” in the exploded views (SPM-05092)
1.8	2006.02	Change of part number of X201 (SPM-06007)